

10p

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Covent Garden

Carmen

by GILLIAN WIDDICOMBE

Covent Garden's tracking in musical and her characterisation, unimpeachably likeable. He continued last Friday with the appearance was overdone. Or debut of Ruza Baldanica's *Carmen* and Gordana Jevrovic's *Micaela*, both from Yugoslavia. They added considerable lustre to a generally good-looking revival of Michael Gelliot's 1973 production, admirably conducted by the young Spanish conductor Jesus Lopez-Cobos. Mezzo or soprano? we always ask of a new *Carmen*. Ruza Baldanica scores down the dividing line, for though her voice is not yet fully grown at either extreme, the tone is excellent in the middle of *Carmen*'s singular range. It is a little more sultry with flinty ferocity than its control never slovenly vibrato and intonation are nicely styled. Friday's first act suggested star quality, for both the Habanera and Seguidilla were remarkably well sung, and Michael Baldanica's movements were those of a naturally glamorous woman with wide-featured face in the shape favoured by advertisers for Revlon. But *Carmen* is a long, increasingly taxing role: Miss Baldanica had enough left for the dramatic edge required by the card scene and the fourth act duet with Escamillo, in which *Carmen* does formal gown and bearing, suggesting that her technical guard was tiring. Gordana Jevrovic's *Micaela* is a pretty sung—she was last year's Chalkovsky Competition in Moscow. The texture is sharper than the pink-cream voice usually chosen for *Micaela*, and the style of vibrato is recognisable. But on Friday her version was sympathetic, able.

Albert Hall

Verdi Requiem

by MAX LOPPERT

The particular interest of the "Agnus Dei"—indicated Saturday's Requiem at the Albert Hall—in which the New Tremblay as a French lyric Philharmonia, the London Choral Society and the London Oratorio Society were not ununitedly two years ago; but her artistry is still Lovett—was the quartet of soloists. Each was a relatively unfamiliar singer of some merit, and each exemplified a singing style so much unlike the other that the ensemble could fairly have been expected to founder. Toyne called the Manzoni Requiem an interpretation of the hopes and fears of mortal man, with a French-Canadian soprano, Dutch mezzo, Australian tenor and Bulgarian bass, an unusually wide net had been spread to catch the ambassadors of those hopes and fears. Yet it was, unexpectedly, successful combination, and the wonderfully universal quality of Verdi's passionate humanity was thereby freshly emphasised. The least familiar, and in some respects most impatiently awaited singer, in view of her beautiful Elisabeth de Valois in the Radio 3 "Pondus Dom Corone" broadcast of 1973, was the soprano Edith Tremblay. In many respects it was a disappointing appearance, for most apparent nerves contrived interminably to rob Miss Tremblay's finely calibrated tone of its security and in the heroic, chorale-dominant aspects of the music, she could never be ideal. Certain phrases—her delicately sculpted *Salve me*, and, please, the long-lined clarity in

Leicester Phoenix

Johnny Boxer

by MICHAEL COVENEY

The stage of this friendly theatre is dominated by a boxing ring around which the more ring around and within which Phil Woods, the star of the National East End boxing of 1930s. Similar in structure to Bill Bryden's *Benny Lynch* (about the Glasgow champion), the piece works reasonably well as a story but is marred by a devoid of focused comment, even historical detail. The rise of a sporting star from poverty to sudden fame and down again to poverty (this time, a bitter poverty) is common enough—what Arsenal star of the same period now tells newspapers? But a playwright of to-day should surely find a way of making his point that does not so obviously derive from the style of the Hollywood B-movie. The backdrop of the action, as it did in Mr. Bryden's play, with the title fight itself, right at the beginning of the second act. Chris Barnes as Johnny, apparently trained with the Army for six months; he came out of his corner like a mad dog ferret, but, for all his flailing and stream, landed few good punches on his opponent who was back on his heels for most of the first round, and slumped breathlessly in his corner at the bell before coming out, incredibly, to knock out his opponent 30 seconds into Round



Pat Keen, Joseph Greig and David Seames

Nottingham Playhouse

Jug

by B. A. YOUNG

Jug is Henry Livings' adaptation into contemporary Lancashire of Kleist's blank-verse comedy *Der zerbrochene Krug*. The simple, garrulous characters turn easily from Dutchmen into Lancastrian peasants. The story (which Kleist invented in competition with friends to interpret an etching by Debucourt, "La cruche cassée") is a simple one. Adam Kenworthy (as Mr. Livings calls him), a simple country magistrate, is hearing a case brought by the widow Hirst against her daughter Eva's fiancé Matt Bradbury, who she claims has broken her antique jug. A Member of Parliament, Sir Mulberry Walter, has made an unexpected visit to hear the proceedings and report on the quality of the magistrate to the Solicitor General. Kenworthy is anxious to prove the case against Matt, and when ever there seems any likelihood of adverse evidence coming up—for example, the same old man had been in Eva's room—he contrives some distraction. No difficulty: the court is held in

Liverpool Everyman

One Flew Over the Cuckoo's Nest

Ken Kesey's brilliant novel about life in an Oregon State institutional hospital is, superficially at least, suitable plunder for stage and screen. Kirk Douglas bought up the film rights back in the early 1960s when the book was still in galley form; he then appeared in a stage adaptation for six months on Broadway. The film has just been completed, and is now with Jack Nicholson in the part of MacMurphy, the extrovert con-man and sharp talker who takes up battle on behalf of the fellow inmates with the institution's huge-breasted, ball-breaking supervisor, Big Nurse. Nurse represents the Combine, the glib and hovering symbol of technological advance in the modern world. Kesey's narrative conductor is Chief Bromden, a displaced Indian victim of the Combine's rumbling progress. To remove this element in the book, as does the adapter and director, John Roche, is to reduce the original further than is necessary (let alone justifiable) and leaves us with a sort of joky knees-up with a crowd of gibbering loonies. Nothing wrong with that, but Mr. Roche should not shoot his entertainment with Kesey's title. The book is, quite obviously, a masterpiece of American literature in the tradition of Twain and Faulkner. The Everyman show is a diluted *Mad Sack* indulgently performed. When MacMurphy (in the original) gets half the ward out in a sloop in the final stages of his campaign against Big Nurse, the impact of air, sea and sky on the characters is beautifully captured in a sustained and moving passage of lyrical prose, full of incident and rich in texture; here, the loonies get fitted out in yellow gaudy duds

Coliseum

La Bohème

Exuberance, personality, bitter-sweet lyricism, a glimpse of fine singing, and much pliant conducting—these are some expectations in a repertory revival of *La Bohème*. John Blatchley's production at the Coliseum, nine years old, and revived last week for the umpteenth time, contains all of them, in moderation. None of the bun-fighting is overdone; the friendliness of the young artists is sufficiently restrained to suggest real people rather than caricatures of friends slumming. The best comic acting comes from Denis Dowling, who doubles Benoit and Alcibiades, and eschews notation in favour of perfectly timed, crochety speaking. In personal terms, this revival centres round the strong Rudolf of Keith Erwen and the rather too substantial Mimì of Margaret Curphey. Mr. Erwen's performance is firmly sung, the voice a little bland in colour (like coffee with a lot of cream), but the sense of line expressive and clear. Miss Curphey is welcome for her secure, accurate singing; and as Mimì who can cope with the last act's low

Wexford Festival—3

Lalo and Rossini

by MAX LOPPERT

On Saturday I wrote that in Wexford's Theatre Royal, the score of Lalo's opera *Le Roi d'Ys* was revealed in the full force of its originality and dramatic impact. On stage, at first, the success of Jean-Claude Auray's production, with sets by Bernard Arnould, seemed less likely. The producer's determined avoidance of the massive and the spectacular in favour of abstraction and "interpretation" was to be experienced in his programme note. Here we read that *Le Roi d'Ys* "is a symbolist opera using the legendary anecdote to turn it into the place where good and evil struggle eternally"; that his production could be described by images; and that his set was to be no sea-swept Breton picture, carefully detailed, but underscoring his view, "A changing, irregular land, swollen with water, surrounded by an alarming mass of rocks enclosed with alluvions and decomposing aquatic vegetation." It was hard not to suffer in advance a degree of foreboding, not to fear M. Auray, a staff producer at the Opéra, as representative of that particular abstractionist lunacy that has so far afflicted most of the stagings of French opera at the revived Palais Garnier. And fears seemed to be confirmed during the Overture, against which there had been concocted two images of interpretative enactment—the effect of which was rather more like interference, with both the music and the staging. One had also to contend with the manifestation of an over-magnified, a figurative dressed exactly as the singer and apt to pass portentously across the stage in moments of high tension, thus underlining in thick charcoal the character's "Unconscious Motivation." Beyond these instances of feverish producerism, however, the action escaped further hazard, for the most part; and because M. Auray possesses a theatrical imagination of undeniable potency, the advantages in his slant on the opera were found, in the close-up of the Wexford theatre, considerably to outweigh the defects. His search for underlines, nuances of meaning in the interplay of the characters meant that there was unusual intensity in their confrontations, enacted with an armoury of pose and gesture that may at times have veered towards the sensational, but never failed to be immediately gripping. To the Breton elements in the score there was no particularised response, and that was perhaps a pity; to the personages themselves—not all by any means as fully drawn as the magnificently dark central figure of Margared—there was shown an intriguing, sentient boldness that did much

Round House Studio

A Little Black Magic

The Round House has a new, rather alarming studio theatre with uncomfortable chairs and shocking acoustics. However, this does not deter the very talented and beautiful Peter Straker from giving us his all in a 90 minutes long cabaret time) and delivering an unaccompanied West Indian able musicians (show me an un-familiar person who sound evening in *Piggy* in the main theatre, it says a lot for the and ask to be convincingly artist's stamina and vocal power that a show of this class and original. And he sings some vitality is within his scope. And it is quite a scope: for when he half: Weill's "Alabama Song" (from *Happy End* with a powerful "Stay With Me Baby," falsetto chorus and silk handkerchief) Brax's "Caravan" (the one that gets faster and faster, a superb technical achievement) and "Jackie", a number from the American hit black musical *The Wiz* and a lively "Slap Slap Boogie" (look at those gyrating and it is an engaging sight, hips!).

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IN DEED IT IS

PM calls for co-operation in battle against inflation

BY OUR INDUSTRIAL STAFF

THE PRIME MINISTER appeals through competing in world markets with all-consumers, than by work with the Government to shrink into a wage economy."

A special issue of the CBI quarterly review concentrates on the problem of what lies ahead for Britain in the next 12 months. Sea oil. "Otherwise, we shall forward by Mr. Harold Wilson, in addition to the viewpoint put forward by the other two leaders of the political parties, and the director general of the CBI, Mr. Len Murray, of the TUC, says workpeople will have to change many long-held attitudes and assumptions, but in return, both Government and management will have to change their thinking."

Mrs. Margaret Thatcher, the leader of the Opposition, argues for a greater understanding of the role of profits in business, and urges increased profitability as the way to boost investment. She says "British business is more likely to be efficient while he welcomed the measures taken by Denis Healey, Chancellor of the Exchequer, and Eric Varley, Industry Secretary, in September. "We pointed out that a broader programme of expansion was still needed."

Mr. Murray, reinforcing his earlier calls for import controls, says: "Perhaps the single most acute anxiety at present is the growth of imports in particular sectors, and the implications of this not only for jobs in the short term but also for the existence of major sectors of British industry."

Mr. Murray calls in the review for more Government action to deal with rising unemployment. "Selective Government action to curb and eventually reverse the rise in unemployment in the U.K. is urgently needed."

Company profits fall continues

By Ron Putland

PRE-TAX profits of companies reporting last month continued to decline, although at a more modest rate than in recent months.

The 89 companies that published their full accounts in October produced pre-tax profits of £150.1m., compared with £155.2m. a year earlier, a fall of 3.2 per cent. This is a better performance than in September, when there was an 8.4 per cent. shortfall, and in August, when profits were down by 11.3 per cent.

Only one leading company (Great Universal Stores) reported last month. Dividends payable to shareholders last month amounted to £24.9m., down 2.5 per cent. on October, 1974.

That is why the TUC has been urging the need for selective import controls. "The need for the nation to welcome and encourage change is the theme of the article by Mr. Campbell Adamson, of the CBI, who says: "The first priority is a change in the whole attitude towards growth and industrial profitability as the vital trigger for growth."

Import controls would allow the Government to expand the economy without waiting for a recovery of world trade, the Labour Research Department suggests. It argues that curbs on foreign goods would not lead to retaliation because other countries have more to lose.

PRE-TAX PROFITS

DIVIDENDS

1973 1974 1975

Plastics processors seek 'little Neddy'

BY RAY DAFTER

THE plastics processing industry is seeking its own "little Neddy" within the National Economic Development Office to emphasise its importance in the U.K. economy.

The sector steering committee has applied to be taken out of the chemicals "little Neddy" and to be given greater status of its own. Mr. Ron Lewis, chairman of the committee and president of the British Plastics Federation, said such a move would give "fresh impetus to a much neglected industry."

The move by the processing sector underlines the difference of interests in the overall plastics industry. On many occasions it has been difficult to reconcile the aims of material manufacturers—companies like ICI, BP, Shell and Esso—with their customers which process the plastics into consumer and engineering products.

It is estimated that there are some 2,800 processing companies in the U.K. Last year they converted between £530m. and £650m. worth of materials into products with a sales value of around £1.5bn.

According to the Plastics Federation, which is itself driving for a higher membership among processors, the sector has a capital base of around £740m. and some 156,000 employees.

Processing companies are having a lean time because of the general economic recession. As a result material suppliers are now operating plants at 50 per cent. of capacity.

Brokers forecast rise in demand in mid-1976

BY ANTHONY HARRIS

A "SIGNIFICANT RECOVERY" in demand, led by exports and stockbuilding, is forecast from mid-1976 by stockbrokers Phillips and Drew, whose monthly economic forecast, published to-day, provides its first estimate to mid-1977.

Real growth of 4.4 per cent. in the year to July 1977 is forecast, even in the absence of any Government action to stimulate the economy. This is thought unlikely because of difficulties in attaining the Government's inflation objectives, and in securing a satisfactory second-phase agreement on wage restraint.

The forecast points out that the Government will face a number of painful dilemmas in the next few months, before recovery begins.

The brokers expect that the forecast on import controls where the Government is expected to yield to demands for temporary and selective restrictions where dumping by importers can plausibly be argued, but will refrain from wide-ranging restrictions for fear of retaliation.

Inflation is forecast to average 13.4 per cent. from now to the end of 1976, while the negotiations over future wage policy "are likely to take place when inflation is still running at 16-17 per cent."

£10 dine-dance ferries for Belgium

BY JAMES McDONALD, SHIPPING CORRESPONDENT

TOWNSEND THORESEN Car Ferries is offering a round trip in its newest ship, Viking Valiant, on the Felixstowe-Zeebrugge route for £10, which includes a three-course dinner, discotheque dancing, cabin accommodation and continental breakfast.

Dine-Dance sailings leave Felixstowe at 4 p.m. on Fridays and Saturdays. On arrival in Belgium there is a two-hour

shop-ovr and passengers may go ashore although the dining and dancing continues. The ship arrives back at Felixstowe at breakfast time the following morning.

These special no-passport trips are aimed particularly at parties of friends or groups organising club or company outings. Arrangements for each travel can be made for groups of 30 or more.

Housing finance reform plan

BY MICHAEL CASSELL

A 10-YEAR plan for the reform of housing finance has been put forward by the Housing Centre Trust.

The Centre has submitted evidence to the Government's present review of housing finance and says that its proposals should be broadly acceptable to all the various interest groups as well as being fair in its effect on individuals.

The main recommendation is a series of financial measures calculated to give the necessary confidence to central and local Government, building societies and builders for a house building and improvement programme.

The measures are designed to share Exchequer housing aid funds fairly between owner-occupiers and tenants in subsidised property, to allow for maximum freedom of housing choice and to ensure efficient use of money, manpower and materials.

In the private sector, the centre suggests that help should be confined to those people most in need. Tax relief would only be given on new mortgages at the standard rate and a "one-man-one-mortgage" principle established which would provide less favourable terms than at present for the owner who could afford to exchange his property for one costing more.

In the public rented sector, a national housing account is proposed in which the pooled loan charges of all authorities are divided by the pooled values of all houses in council ownership. A formula would allocate an annual target contribution to the account by each local authority leaving it free to fix individual rents. A system of surpluses and deficits would help to even out pressures due to changes of history or location.

The centre also suggests a common rate of tax relief subsidy to be applied to both mortgage interest and local authority charges. It should start initially at 11 per cent. and be gradually reduced over the 10-year period.

Fewer cases for Public Trustees

ATTRACTING new business to the Public Trustee's office has no quick or easy solution, says Mr. H. H. W. Duff, the Public Trustee, in his 1974-75 report to the Lord High Chancellor.

Although there are signs of increases in the number of acceptances, there is no immediate prospect of reversing the decline in the number of cases under administration," he adds. The number of cases accepted in the year to March 31 rose slightly from 128 to 146 but their value fell by over £1m., while completed administrations (735) remained at about the same level.

Previous experience suggests that occasional advertising in the national Press produced insufficient new business to justify renewing that campaign but consideration is being given to selective advertising in local Press and house journals.

The year ended with a provisional deficit of £113,908, compared with the previous year's adjusted deficit of £56,895.

Sixty-seventh Annual Report of the Public Trustee, 1974-75, 50s. 20p.

Fewer renovation grants approved

THE NUMBER of home improvement grants for local authorities approved is being the fall was almost 50 per cent. approved is nearly 70 per cent. below the peak levels of 1973.

Mr. E. G. Plucknett, chairman of the council, has told Mr. Freeson that the latest Government figures, which showed a substantial drop in renovation grants in the third quarter of this year, did not indicate the full severity of the decline

because the 1974 performance was significantly down on the preceding year.

The council says that between January, an September total grants approved were just over 48 per cent. down on the same period of 1974, and over 68 per cent. below the equivalent nine months, of 1973.

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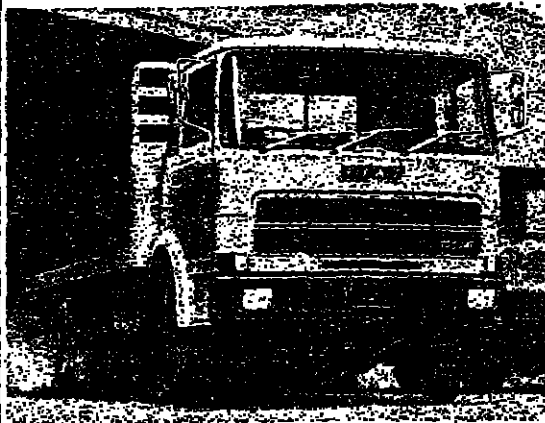
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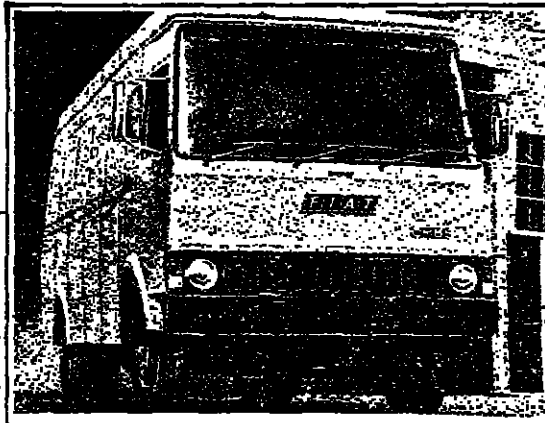
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OVERSEAS NEWS

Leftists may be gaining ground in Beirut

BY IHSAN HIJAZI

BEIRUT, Nov. 2.

SECURITY committees representing the rival factions to-day began the process of applying new measures aimed at enforcing a yet another cease-fire—the 12th in the past six weeks.

The committees were formed after a meeting held by the Prime Minister, Mr. Rashid Karami, which went on for most of the night and into the early hours of the morning.

Afterwards the Prime Minister said that if the new measures were carried out, life in the country would begin to go back to normal; the Lebanese, who would have been virtual prisoners in their houses, could venture out to the beaches to-day.

But only a few fishermen were seen along the coast. In fact a part of the seafloor remains one of the hottest confrontation areas here.

Militiamen of the Rightist Phalangist Party are holding on to their positions in the main international hotels along the front while leftist armed men have been intensifying the pressure to oust them.

Sporadic shooting and explosions continued to be heard throughout the day despite the new truce.

It is thought that at least 30 people died in Beirut and in the Bekaa Valley in eastern Lebanon to-day.

The combatants are no longer satisfied with shooting it out from fixed positions but have been trying to gain territory.

They have made claims and counter-claims as to who is winning on the ground. The daily newspaper Al Moharrer, which reflects the views of the combined Leftist forces, said in its main story that the military position of the Phalangist Party had collapsed, that Phalangist militiamen were running out of ammunition and that the Phalangists hoped to receive emergency supplies by air to-day.

Phalangist sources, on the other hand, said that they had pushed back the Leftists in several districts and put them on the defensive. The sources also charged that the Palestinian Commando Movement had been fighting in full strength on the

Israel plans to send more cargoes through Suez

BY L. DANIEL

TEL AVIV, Nov. 2.

WITH the first Israel bound cargo—8,500 tonnes of cement from Constanza which is being carried by the Greek vessel "Olympus"—to the Israeli Red Sea port of Eilat—now passing through the Suez Canal, plans are already afoot for the further despatch of cargoes through the canal. This is in view of the last minute difficulties which were encountered by the Greek skipper of the vessel in getting

Illegal Spanish parties unite in freedom call

BY ROGER MATTHEWS

MADRID, Nov. 2.

IN A RARE display of unity all Spain's illegal opposition parties last night issued a joint statement declaring that they were going to step up their fight for democracy, based on the popular will of the people.

The parties, which range from the extreme Left through the Communists, Socialists, Christian Democrats, and regional parties to the Social Democrats, said they rejected the laws of succession dictated by General Franco and demanded a referendum to decide the constitutional future of the nation.

Among their specific demands were the release of all political prisoners and the return of exiles, the introduction of full human rights as recognised by international agreements, free trade unions, the rights of all political parties to organise freely, and universal suffrage to decide via a constituent assembly on the most favoured form of government for Spain.

These aims would be pursued, according to the communiqué, by the mobilisation of the people through a series of peaceful actions. At a Press conference last week the Communists, who are the leading faction in one of the country's two main alliances, the Democratic Junta, said they were planning to stage a massive general strike when conditions were ripe.

The Junta added that talks were being held with the Democratic Platform, the other main opposition alliance, the fruits of which were seen last night in the joint communiqué. A planned Press conference had to be

abandoned because of police action.

Meanwhile Prince Juan Carlos has been continuing his extensive talks with a range of Centrist and Right-wing politicians. In order not to upset the extreme right too rapidly he has seen Senator Jose Antonio Giron, a former Franco Minister, and has been getting another view on the regime of the past 36 years from ex-Foreign Minister Senor Ramon Serrano Suner.

The latest bulletin on General Franco said that he was still gravely ill but had taken Communion this morning in the presence of his family. His temperature had tended to fluctuate during the day although the internal bleeding had almost stopped. In a newspaper interview his sister said that the family was praying for a miracle.

U.S. TECHNICIANS ARRIVE

By Our Own Correspondent

TEL AVIV, Nov. 2.

THE first group of American technicians which is to be posted at the forward electronic listening posts on both the Egyptian and Israeli sides of the strategic Sinai passes has arrived in the Middle East, some of them in Israel. The men, all volunteers, have signed for periods of up to three years. A few of them are Vietnam veterans. They are likely to tour the area in which they are to be stationed within the next few days.

'New York default would threaten U.S. recovery'

BY GUY DE JONQUIERES

NEW YORK, Nov. 2.

IF NEW York City is allowed to default the impact will damage the U.S. economic recovery and increase the number of unemployed across the country, according to a new report published by the joint Economic Committee of Congress this week-end.

The report said that a default would push up interest rates and make banks more cautious in their lending policies. Higher borrowing costs will force state and local governments—which account for about 15 per cent of gross national product—to cut back their expenditures.

As a result, the report forecasts, the rate of real economic growth in the U.S. will be reduced by a full percentage point between the final quarter of this year and the last quarter of 1976, and the number of unemployed will rise by 300,000.

The committee, which is chaired by Senator Hubert Humphrey of Minnesota, sharply disputes President Ford's claims that a default by New York would have only insignificant repercussions on the rest of the country and says that the ultimate cost of denying Federal aid will be much higher than that resulting from temporary Federal guarantees of the City's borrowings.

Without Federal assistance, the committee says, the City will have to cut its budget for basic services by half in the first three months of next year. This would

have such a devastating effect on basic city services that it cannot be considered a viable option.

Despite Mr. Ford's threat to veto any Federal aid legislation last week, both the House and Senate banking committees have now approved broadly similar proposals to guarantee the City's borrowings before or after a default.

But the outlook for the municipalities in New York and in London, in which the size of the remains extremely uncertain. Meanwhile, New York City and \$3bn. The exact sources of the money were never identified, and if the loan had been made several billion dollars, support would have been channelled through the Burlington Bank in London.

City officials said that they rejected the offer because the lender insisted on loan guarantees by big New York City banks—which could not be obtained—reason was that the offer was hedged about with too many unacceptable conditions. The loan offer was first reported by Jack Anderson, the syndicated columnist, who said limit.

Portugal faces week of tension over Angola

BY JANE BERGEROL

LISBON, Nov. 2.

A TENSE week lies ahead for Portugal in the build-up to basic Angolan independence on November 11. There are risks of more extremist violence as a right tries to force the sixth Government's attitude on Angola towards neutrality and the left tries to steer it towards outright recognition of the socialist Popular Movement for the Liberation of Angola as the sole representative of the Angolan people.

Showing further determination to crack down on leftist armed militias, Portugal's Revolutionary Council has decreed that armed brigades in possession of military weapons will be tried before military and not ordinary civilian courts. In a series of tough measures published over the week-end the council also set up special military courts for trying the former FIDAE-Caetano's political police—and for trying officers involved in the two unsuccessful Angolan coups. The council has also decreed the recruiting of more ex-soldiers into a new prison guard paramilitary force.

The two ex-officers who were arrested in a Braga Catholic seminary on Friday, both of whom were involved in the failed March 11 coup and fled to Spain with Spínola, have now been brought to Lisbon's Caxias jail for interrogation. The circumstances of their arrest link Spínola's clandestine Democratic Movement for the Liberation of Portugal (MLDP) both with the Catholic Church and with Angolan refugees in Portugal.

Braga townspeople alerted the local police and military after a number of "well-dressed" people

entered a local church and an unusually timed mass was held. The church doors later eluded shut and the "congregation" apparently adjourned for a secret meeting in the adjoining seminary, being used as a refugee centre. Police found the Angolan refugees' beds in the seminary. More searches are under way in the north to check on reports of other Spínolists' illegal entry into the country.

The Angolan refugees who have flooded into Portugal prior to independence on November 11 have now organised themselves into a number of associations and are putting out a weekly newspaper. There is some fear they will clash to-morrow in Lisbon with a major demonstration organised by the left in support of the socialist Popular Movement for the Liberation of Angola (MPLA), as many of the refugees are said to support the two other liberation movements and are bitterly opposed to what they see as the risk of Portuguese Government recognition of the MPLA as the sole representative of Angola.

Reuter reports from Luanda: The three warring liberation movements in Angola have caused fire. Portuguese Government sources said here to-day. They said the pause in the fighting which came into effect at dawn yesterday, was to allow for OAU-sponsored talks in Kampala aimed at a peaceful end to the conflict.

The Portuguese sources said the ceasefire agreement meant none of the three armies could advance beyond positions they held as of yesterday.

Italy Communists will not press for election

BY DOMINICK J. COYLE

ROME, Nov. 2.

THE ITALIAN Communist Party has now followed formally the attitude of the Socialists in rejecting the taking of any initiative which could result in an early general election, thus seemingly extending for the foreseeable future the life of the present minority coalition administration of Mr. Aldo Moro, the Prime Minister.

Following the June 15 regional elections here, in which the Communists lost sweeping gains, there was widespread speculation regarding an imminent collapse of the Moro government, but the indications now are that the Communist Party in particular is in no mood to bring about a new government crisis.

Sig. Enrico Berlinguer, the

Communist Party's secretary, said following a meeting of the Party's central committee that the Communists have no wish to create political vacuums and therefore were opposed to early national elections. A similar policy statement has already come from the Socialists whose external support has kept the present two-party Government in office.

The immediate strategy of the Communists is relatively simple. The party is anxious to enter Government through the normal democratic process and appreciates that the full realisation of the so-called "historic compromise" can only emerge in a grand alliance with the ruling Christian Democrats shorn of its Conservative and often neo-Fascist right wing.

Innocenti ultimatum stays

BY DOMINICK J. COYLE

ROME, Nov. 2.

INNOCENTI, British Leyland's troubled Italian subsidiary, is apparently maintaining its ultimatum to close down its Milan plant if the Government and the trade unions here do not agree to 1,700 immediate redundancies, or roughly one-third of the company's total labour force, but the deadline has now been moved back from to-morrow.

Innocenti originally announced last November 3 deadline for agreement on a sharp cutback in the Innocenti works were essentially labour force, or alternatively a complete closure of the company, did not require any direct Ministerial intervention or initiative.

Cambodia, Thailand accord

BY OUR OWN CORRESPONDENT

BANGKOK, Nov. 2.

FULL diplomatic relations at Chonbavan, said he thought this ambassadorial level between Cambodia and Thailand were announced in a joint communiqué published simultaneously in Bangkok and Phnom Penh to-day, concluding a successful five day diplomatic mission to the Thai capital led by Khmer Deputy-Premier, Ieng Sary.

The delegates of the two Governments also agreed to open both rail links and liaison offices at border towns. Cambodia will also accept those Khmer refugees in Thailand, estimated at 10,000, willing to return, while Thailand has promised to keep those who stay behind out of politics.

The actual exchange of envoys awaits "a date convenient to both countries" but the Thai Foreign Minister, Chatichai

It was surprising that nothing more substantive on trade came out of the meeting other than the agreement for later discussions. Speculations prior to Ieng Sary's arrival pinned the real motive for his first Khmer visit to a non-Communist capital on urgent need for rice and fuel which the Thais were willing to sell as the price of diplomatic recognition. But diplomatic relations were established without corresponding concrete trade agreements.

The actual exchange of envoys awaits "a date convenient to both countries" but the Thai Foreign Minister, Chatichai

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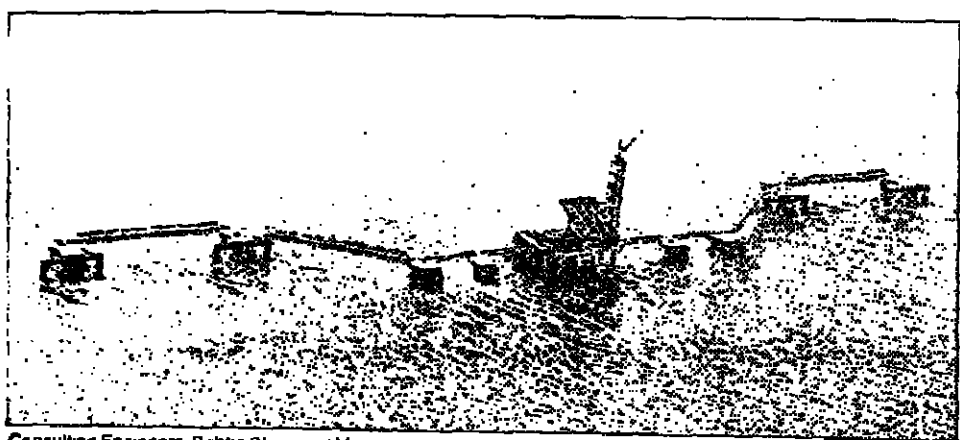
bridges. The Terminal, designed for the loading of crude oil into super-tankers up to 300,000 DWT, forms an integral part of BP's whole North Sea Oil Development Project.

It comprises a loading platform, two inner berthing dolphins, two outer main dolphins and four mooring dolphins all with connecting walkways. The whole project, through the use

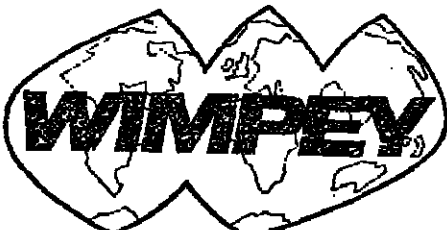
of extremely large diameter piles, was constructed on just 47 piles. We had to contend with difficult pile-driving conditions, rough weather and tricky material transportation.

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Floating Rate Notes 1977

In accordance with the provisions of the above Notes, Bankers Trust Company, as Fiscal Agent thereof, has established the Rate of Interest on such Notes for the semi-annual period ending April 30, 1976 as nine percent (9%) per annum. Interest due on such date will be payable upon surrender of Coupon No. 11.

Bankers Trust Company,
Fiscal Agent
Dated: November 3, 1975

LABOUR NEWS

Blast furnaces public inquiry starts work to-morrow

BY CHRISTIAN TYLER, LABOUR STAFF

THE BRITISH STEEL Corporation will ask a public inquiry this week to guarantee the future of £500m. of new technology

threatened by a labour dispute with blast furnacemen.

For the BSC, the inquiry is a test case for the whole field of union-co-operation in advanced technology as well as a means of resolving the pay dispute at Llanwern works in South Wales which brought the National Union of Blastfurnacemen to the brink of a national strike in September.

It will be for the three-man tribunal, which starts work to-morrow to decide whether to hear third parties such as the CBI who may wish to refer to other well-known case histories where failure to agree rates with unions has caused expensive new plant to stand idle for months.

BSC will submit a mass of written evidence before oral evidence starts to-morrow and will again stress that it cannot treat blastfurnacemen in isolation from other skilled steelworkers with whom their pay is linked.

The National Union of Blastfurnacemen will argue that the

£10.31 a week rise offered by BSC for operating the new Llanwern furnace is insufficient, especially when set against the £5.50 a week rise for men on other furnaces.

Its evidence is expected also to refer to the difficulty of the work—the NUB often compares itself with the miners in this.

The NUB's case will be influenced by the fact that new technology over the next few years could cut its membership and independent union of only 16,000 members more vulnerable still to takeover.

Chris Baur, our Scottish correspondent, writes: There will be a gradual return to normal production at the British Steel Corporation's Ravenscraig plant, Motherwell, this week, following the week-end decision by coke oven employees there to end their 17-day strike.

The Corporation will begin bringing back the 2,000 men it had laid off and expects to have the steelworks operating normally in about ten days.

Building trade meeting on pay

BY OUR LABOUR STAFF

FIRST soundings for the next round of wage negotiations for about 1m. building and civil engineering workers will be taken to-day when unions and employers meet to consider how the cost of living has eroded the last pay deal.

The unions are not expected to press for cost of living adjustments despite a move by the Union of Construction, Allied Trades and Technicians to reopen such a deal, which has been overtaken by the £5 pay policy.

While UCATT voted against the £5 policy other big building unions are committed to supporting it.

Since the present deal expires

next June, the unions may consider whether to wait until the following month when the present policy expires, or whether to start negotiating for the maximum £6 later this year. Employers, especially building employers, will certainly resist a claim for the full £6 because of the state of the industry.

CONSTRUCTION STAFF JOIN APEX

The white-collar Association of Professional, Executive, Clerical and Computer Staff says it has made "big advances" in recruiting construction employees, and now claims a total of 5,000 members in the industry.

Pension and job safety call by TUC

By Our Labour Staff

PROTECTION for jobs in all industries and for pensions caught up in the economic crisis was advocated by senior TUC leaders at the week-end.

Mr. Jack Jones, general secretary for the Transport and General Workers Union, revived his long-running campaign on behalf of the old with a call for the Government not to let their standard of living fall during the crisis.

This month old-age pensions are due to rise by £1.70 a week for a single person and £2.70 for a married couple. But, says Mr. Jones, a more up-to-date calculation against prices and earnings would suggest increases of £3.40 and £5.40 as the proper amounts. Fairer pensions would cost a great deal, he says, but there would be a saving of £400m. in supplementary benefits.

Meanwhile, Mr. David Bassett, general secretary of the General and Municipal Workers' Union, returned to the attack on unemployment and industrial policy with a speech in Glasgow.

Mr. Bassett called for "urgent new action" on job losses, stressing that there were measures available to the Government that would save on the import bill and on unemployment benefit without damaging the counter-inflation strategy.

Reminding the Government of the success of the £5 pay policy, Mr. Bassett said this was "remarkable testimony to the restraint and responsibility of the British trade union movement."

DESPITE SERIOUS technical obstacles, talks will continue this week on an attempt by leaders of 60,000 Yorkshire miners to take over and operate a coking plant near Barnsley. The plant, which employs 400 workers, is due to close later this week.

Mr. Arthur Scargill, president of Yorkshire's National Union of Mineworkers, put forward the union takeover plan last week after the National Carbonising Company announced the final closure date. Lengthy attempts had been made to keep open the plant, together with a sister works, at Rotherham.

In his closure statement, Mr. Dennis Stroud, NCC managing director, said he had offered both a single person and £2.70 for a married couple. But, says Mr. Jones, a more up-to-date calculation against prices and earnings would suggest increases of £3.40 and £5.40 as the proper amounts. Fairer pensions would cost a great deal, he says, but there would be a saving of £400m. in supplementary benefits.

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Convinced

Union leaders are convinced that they could speedily organise a union co-operative to run the plant at a profit, despite the obvious need for considerable capital expenditure.

Although the Yorkshire NUM is extremely wealthy by provincial trade union standards, it is considered unlikely that the union itself would attempt to finance any large-scale modernisation. An approach to the Government would seem likely if the takeover succeeds.

Another factor in the affair is the need by local glass companies for the coke oven gas produced at the plant. This is important, locally, as a glassworks fuel.

Hoover strike goes on

A strike by 140 machine setters at Hoover's domestic appliance plant in Cambuslang, near Glasgow, is to continue. The filling of vacancies and upgrading jobs, has so far caused 2,000 people to be laid off.

The men decided unanimously over the week-end to continue the stoppage and do not expect to meet again until Thursday.

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and at
The Stock Exchange.

BOND DRAWING

TELEFONAKTIEBOLAGET L M ERICSSON

9 1/4% Bonds 1985

S. G. Warburg & Co. Ltd., announce that the redemption instalment of U.S. \$1,250,000 due 1st December, 1975 has been met by purchases in the market to the nominal value of U.S. \$200,000 and by a drawing of Bonds to the nominal value of U.S. \$1,050,000.

The distinctive numbers of the Bonds, drawn in the presence of a Notary Public, are as follows:-

12	40	67	84	122	150	177	204	232	258	287	315
341	370	396	425	450	478	508	534	561	588	616	643
670	699	725	754	780	807	836	862	891	918	945	973
1007	1037	1063	1092	1120	1148	1176	1204	1232	1260	1288	1316
1345	1373	1401	1429	1457	1485	1513	1541	1569	1597	1625	1653
1681	1709	1737	1765	1793	1821	1849	1877	1905	1933	1961	1989
2017	2045	2073	2101	2129	2157	2185	2213	2241	2269	2297	2325
2353	2381	2409	2437	2465	2493	2521	2549	2577	2605	2633	2661
2689	2717	2745	2773	2801	2829	2857	2885	2913	2941	2969	2997
3025	3053	3081	3109	3137	3165	3193	3221	3249	3277	3305	3333
3361	3389	3417	3445	3473	3501	3529	3557	3585	3613	3641	3669
3697	3725	3753	3781	3809	3837	3865	3893	3921	3949	3977	4005
4033	4061	4089	4117	4145	4173	4201	4229	4257	4285	4313	4341
4369	4397	4425	4453	4481	4509	4537	4565	4593	4621	4649	4677
4705	4733	4761	4789	4817	4845	4873	4901	4929	4957	4985	5013
5041	5069	5097	5125	5153	5181	5209	5237	5265	5293	5321	5349
5377	5405	5433	5461	5489	5517	5545	5573	5601	5629	5657	5685
5713	5741	5769	5797	5825	5853	5881	5909	5937	5965	5993	6021
6049	6077	6105	6133	6161	6189	6217	6245	6273	6301	6329	6357
6385	6413	6441	6469	6497	6525	6553	6581	6609	6637	6665	6693
6721	6749	6777	6805	6833	6861	6889	6917	6945	6973	7001	7029
7057	7085	7113	7141	7169	7197	7225	7253	7281	7309	7337	7365
7393	7421	7449	7477	7505	7533	7561	7589	7617	7645	7673	7701
7729	7757	7785	7813	7841	7869	7897	7925	7953	7981	8009	8037
8065	8093	8121	8149	8177	8205	8233	8261	8289	8317	8345	8373
8401	8429	8457	8485	8513	8541	8569	8597	8625	8653	8681	8709
8737	8765	8793	8821	8849	8877	8905	8933	8961	8989	9017	9045
9073	9101	9129	9157	9185	9213	9241	9269	9297	9325	9353	9381
9409	9437	9465	9493	9521	9549	9577	9605	9633	9661	9689	9717
9745	9773	9801	9829	9857	9885	9913	9941	9969	9997	10025	10053
10081	10109	10137	10165	10193	10221	10249	10277	10305	10333	10361	10389
10417	10445	10473	10501	10529	10557	10585	10613	10641	10669	10697	10725
10753	10781	10809	10837	10865	10893	10921	10949	10977	11005	11033	11061
11089	11117	11145	11173	11201	11229	11257	11285	11313	11341	11369	11397
11425	11453	11481	11509	11537	11565	11593	11621	11649	11677	11705	11733
11761	11789	11817	11845	11873	11901	11929	11957	11985	12013	12041	12069
12097	12125	12153	12181	12209	12237	12265	12293	12321	12349	12377	12405
12433	12461	12489	12517	12545	12573	12601	12629	12657	12685	12713	12741
12769	12797	12825	12853	12881	12909	12937	12965	12993	13021	13049	13077
13105	13133	13161	13189	13217	13245	13273	13301	13329	13357	13385	13413
13441	13469	13497	13525	13553	13581	13609	13637	13665	13693	13721	13749
13777	13805	13833	13861	13889	13917	13945	13973	14001	14029	14057	14085
14113	14141	14169	14197	14225	14253	14281	14309	14337	14365	14393	14421
14449	14477	14505	14533	14561	14589	14617	14645	14673	14701	14729	14757
14785	14813	14841	14869	14897	14925	14953	14981	15009	15037	15065	15093
15121	15149	15177	15205	15233	15261	15289	15317	15345	15373	15401	15429
15457	15485	15513	15541	15569	15597	15625	15653	15681	15709	15737	15765
15793	15821	15849	15877	15905	15933	15961	15989	16017	16045	16073	16101
16129	16157	16185	16213	16241	16269	16297	16325	16353	16381	16409	16437
16465	16493	16521	16549	16577	16605	16633	16661	16689	16717	16745	16773
16801	16829	16857	16885	16913	16941	16969	16997	17025	17053	17081	17109
17137	17165	17193	17221	17249	17277	17305	17333	17361	17389	17417	17445
17473	17501	17529	17557	17585	17613	17641	17669	17697	17725	17753	17781
17809	17837	17865	17893	17921	17949	17977	18005	18033	18061	18089	18117
18145	18173	18201	18229	18257	18285	18313	18341	18369	18397	18425	18453
18481	18509	18537	18565	18593	18621	18649	18677	18705	18733	18761	18789
18817	18845	18873	18901	18929	18957	18985	19013	19041	19069	19097	19125
19153	19181	19209	19237	19265	19293	19321	19349	19377	19405	19433	19461
19489	19517	19545	19573	19601	19629	19657	19685	19713	19741	19769	19797
19825	19853	19881	19909	19937	19965	19993	20021	20049	20077	20105	20133
20161	20189	20217	20245	20273	20301	20329	20357	20385	20413	20441	20469
20497	20525	20553	20581	20609	20637	20665	20693	20721	20749	20777	20805
20833	20861	20889	20917	20945	20973	21001	21029	21057	21085	21113	21141
21169	21197	21225	21253	21281	21309	21337	21365	21393	21421	21449	21477
21505	21533	21561	21589	21617	21645	21673	21701	21729	21757	21785	218

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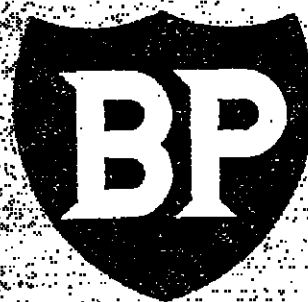
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The Executive's World: The Office

EDITED BY JAMES ENSOR

Last Friday the Mail Users' Association confronted the Post Office. Roy Levine reports on the talks and explains why we may be

Paying more for less at the Post Office

"THE PUBLIC has the wrong idea about what is a fair postal price," says Mr. Alex Curral, managing director of the Post Office's postal division. His attitude reflects the defensiveness of the Post Office following the public outcry at two substantial increases in postal rates this year. Yet, according to Mr. Curral, there could be more increases to come as well as cuts in the service, following the Government's new policy of requiring all public corporations to become profitable.

Addresses

The Post Office has simply not been able to keep its costs down even though the volume of traffic has declined since the peak in 1968. One reason is the steady increase in the number of addresses—about 250,000 new ones each year. About half the total cost of the postal services come from collection, preparation and delivery of letters which are basically fixed charges. With the other half, mainly sorting, there is some scope for reducing overheads by automation, but the trade unions have restricted the use of some of the modern equipment.

Until recently, U.K. postal rates compared favourably with most other countries. Even after the latest round of increases the absolute rates are below average as shown in the table. However, when compared with the general level of costs in each country, the U.K. rates begin to look expensive.

In comparing rates it has to be remembered that the U.K. and France are the only countries which operate a two-tier structure based on speed of delivery.

Another difference is that Britain is now one of the few countries whose postal service is not, in principle, subsidised by government: the user is being asked to pay for the short-fall, a process that hurts until it becomes custom. Not all users, of course, will take kindly to this. Business—which accounts for about a third of total traffic—is already mobilising itself to reduce non-essential mail costs. Companies are recommending economies to their staff which include dispensing with letters of acknowledgment, using second class mail only, reducing the frequency of postings and, in some cases, organising hand deliveries of letters (which is legal only if your own mail is handled).

In addition, some groups have been organising their own internal postal service. Lloyds Insurance Brokers Association was one of the first to explore this possibility. If it goes ahead it could be seen as a test case for others.

Direct mail and publishing companies, which represent about 15 per cent. of total traffic, have mobilised themselves against the new rates. Readers Digest, which claims to be the biggest Post Office customer with some 80m. items



Mr. Robin Fairlie (left) and Mr. Julian Blackwell, co-founders of the Mail Users Association, in the shadow of the inventor of the Penny Post, Mr. Rowland Hill, at GPO headquarters in London.

posted each year at a cost of around 16m., reckons the latest increase in postal charges will add some £250,000 to the company's bill. Its business director, Mr. Robin Fairlie, together with Mr. Julian Blackwell, a director of approach from British Road Services, has formed a new pressure group called the Mail Users Association (MUA). At last month's inaugural meeting over 200 companies were represented: all had annual postal budgets in excess of £10,000 and together represented business worth £50m. service—representing less than a year to the Post Office. "If 10 per cent. of its total deliveries



Mr. Alex Curral, managing director of Britain's Postal Services.

—even though it claims the cost was a mere 3p a letter compared with the 13p charge by the Post Office before rebates. If it were to revive it now, and other members of the MUA did the same, there could be a significant impact on the overall volume of Post Office traffic which has already dropped off by about 7 per cent. following the March price increases and another 3½ per cent. since September. These reductions were much in line with the Post Office's forecasts.

"The trouble with relying on historical precedents," says Mr. Fairlie, "is that whereas before increases were of the order of 10-15 per cent., this year's increases were in the order of 50 per cent."

There have been independent forecasts that traffic will now fall quite sharply and perhaps enough to cancel any benefits

from price increases, causing a vicious circle. Certainly, there has been a noticeable swing from first to second class mail, but it would take a dramatic change in past trends before a collapse in traffic volumes.

If the bulk users withdrew from the conventional postal service there would have to be a corresponding rise in rates to allow for the higher costs of handling the difficult traffic.

What the Association wants essentially are: higher volume rebates, Government subsidies for some uneconomic deliveries (such as rural areas) and a chance to assess the Post Office's financial efficiency.

It has long been Post Office policy to give rebates for bulk business. The rebate, determined by negotiation, depends largely on the benefits (apart from bulk) that a user can offer, for example, presenting post in geographical order, and the debate here is purely on the size of the rebate.

Subsidies

As far as Government subsidies for uneconomic deliveries are concerned, such a move seems highly unlikely, especially in the current economic climate, even if it were practicable to divide the service up in this way.

Finally, the request to examine the Post Office books to see where savings can be made is no surprise. There have been 14 inquiries into the P.O. since it was incorporated in 1969; the Government has already announced its support for yet another: the Post Office Users' National Council (POUNC), also set up by the Government in 1969 and a normally quiescent body, recently put forward its recommendations for saving two-thirds of the expected £300m. deficit expected this year without the September price rises.

One conclusion that the MUA will inevitably arrive at is that some services should be cut. In this, they will find complete

A COMPARISON OF POSTAGE RATES (p.)

Country	Inland	Foreign surface letter	Air mail reply to U.K.	Last increase
U.K. (1st class)	8.5	10.0	—	Sept. 1975
Belgium	7.7	11.4	11.8	Dec. 1974
Denmark	7.1	10.2	10.2	April 1975
France	7.0	9.0	7.0	Oct. 1974
Germany (1st class)	8.6	13.0	13.0	Sept. 1974
Italy	9.2	12.9	12.9	July 1974
Netherlands	7.1	10.7	10.7	March 1975
Norway	9.0	10.8	10.8	April 1975
Sweden	3.0	10.4	10.4	Jan. 1975
Switzerland	3.2	8.1	16.2	Nov. 1973
U.S. surface airmail	4.9	8.3	—	March 1974
	6.4	—	12.8	March 1974

Sterling equivalents converted at rate of £2.03 = £1.

accord at the Post Office as well as at POUNC, even though there may be some disagreement about which services should go up to his Association to negotiate actual contracts—that is public support for cuts.

Over the past nine months we have received an increasing volume of criticism that our postal services are too generous. Recent meetings with businessmen, local authority managers and MPs in Manchester and Birmingham have made him doubly convinced.

He has made four proposals which were rejected by POUNC (which has its own list) but are being discussed with the Government. The proposals are: eliminating Sunday collection; closing all Post Offices on Saturday afternoons; eliminating the second rural delivery; and reducing late collections (7 p.m. and after).

While the proposed cuts could save the Corporation about £20m. an additional £p on postage rates would produce nearly twice that amount. That is one reason why, despite the cuts in services, rates will tend to increase anyway.

After the publicity build-up to last Friday's talks between the MUA and the Post Office, the event proved to be something of a damp squib. Although Mr. Fairlie

expressed his support for higher volume rebates, he made clear that Mr. Curral felt it was not to his Association to negotiate actual contracts—that is public support for cuts. Over the past nine months we have received an increasing volume of criticism that our postal services are too generous. Recent meetings with businessmen, local authority managers and MPs in Manchester and Birmingham have made him doubly convinced.

Following from the talks there may well be an opportunity for the MUA to examine the Post Office accounts and its detailed costing. But Mr. Fairlie made it clear that the Association would first want to consolidate. For a start, the companies that signed the inaugural resolution have been made only provisional members pending the publication of a formal constitution and the payment of membership fees. Until then, it is not even making public its list of provisional members.

The next step will be to appoint a full-time director. These steps are an essential prelude to the MUA's real battle. Because it has challenged the frame of reference under which the Post Office operates as a public corporation, it must ultimately take issue with the Government.

Redundant over twenty-five!

BY SONIA MARKS

The personnel officer was very sympathetic. "I'm so sorry," she commiserated. "You didn't get the job," hastening to reassure me "... but he was quite torn. Believe me, Mrs. Marks, it was neck and neck."

I believed her. I had a glimpse of that other neck. It belonged to a young 20-year-old girl and was framed with long, flowing hair. Mine, on the other hand, though prudently concealed in a high polo-necked jumper, was decidedly middle-aged. If it was a question of necks, I didn't stand a chance!

The two of us were short-listed for the job of secretary to a professor at a local research hospital. She went in first and when I stepped into his office half an hour later, the expression on his face told me all I needed to know. "Torn?" Hardly. The interview was brief. But he was kind. "I'm worried about your children..." he confessed. And glanced at his watch.

I shared his solicitude. I, too, was worried about my children—two teenage daughters... and my freelance writer husband, more free than lance... and the leaping cost of living. That's why I decided to go back to work. It wasn't really a case for the NSPCC. But how to convince the Professor? He'd already seen that other neck!

It's been a touching experience, the amount of consideration that's been shown towards my family since I started job-hunting. And all of it from middle-aged men. The Professor wasn't alone in expressing concern.

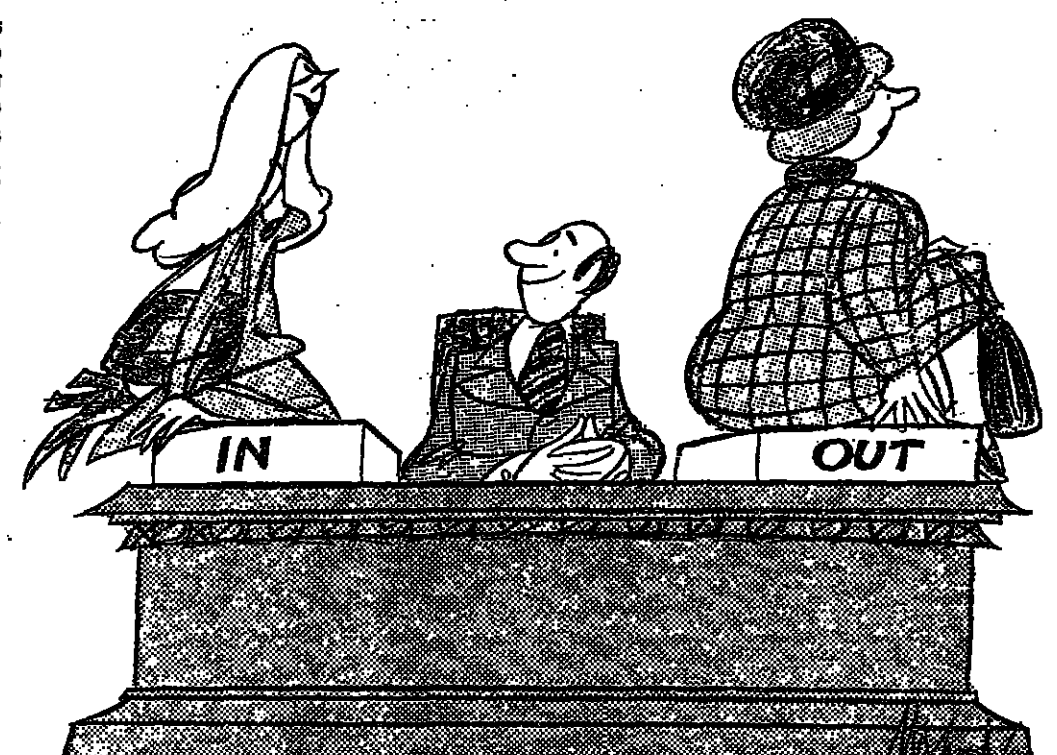
The left-wing trade union secretary was anxious to know whether I had first "consulted" my husband about the interview and plan to return to work. It was, I assured him, a mutual decision. He remained doubtful. "... And how will he feel when his supper isn't put on the table in front of him on time?" he asked.

The sales director of a print firm emphasised: "... this is not the kind of job you can simply forget about when you get home at night..." urging me to tell him "... frankly, I would your husband be willing to spend the evenings discussing your day's work?"

To be just, this firm advertised for a 21-plus. But as they were round the corner, I inquired what the possibility was of stretching the "plus."

Personnel Officer, being a "and only succeeded in enough to an interview (was the case) was amenable.

He had set his heart on a 21-plus! I wonder how he put the job to her. I visualised her dancing at the disco—liquid knees and



Slickering hands—waiting anxiously for a pause in the pounding music to conscientiously whisper in the current boyfriend's ear, the weighty printwork problems of the day.

The builder in a small office on a large trading estate again took up the cause of my children. "I am nervous," he admitted bluntly: "about how they are going to get home at night on their own..." I told him that it was only a ten minute bus journey and they were, after all, 14 and 16. "I'd be worried sick," he muttered accusingly. But pressed on: "And what about their health? Are they in good health then?" Perfect. Thank God! But I could see, there was no consoling him: he became gloomier and gloomier, before asking sharply: "Your speeds... are they high?" (was there a hint of optimism in his voice?) Yes, I admitted. "Well... I'm not exactly looking for someone with high speeds..." triumphant at last...

There are many euphemistic ways of saying: "Madam, we do not wish to engage you." They all add up to the same. "You are old, Mother William," the employer said. "Though your hair has not yet turned white."

To persist in this notion of earning your bread... Do you think at your age, it is right?"

I fast discovered that in the terminology of the "situations vacant" column, "mature" means 25. It does occasionally rise to 35. Rarely does it extend to over-40, as rarely as the magic phrase: "Age immaterial."

Only once during months of qualification:

meticulous searching, did I see an advert for a secretary: "... between 30 and 35," startlingly original and submitted by an American law firm in the city.

For the rest, an entire generation—my generation—of skilled secretaries has been wiped off the face of the earth.

There is a fantasy world in which men see themselves in relation to their secretaries, in which the over-forties simply do not exist.

Fantasy? Even Freud would have been hard pushed to explain the subconscious yearnings expressed in some of today's newspaper advertisements. What, one wonders, would he have made of:

"Secretary for Four Father Figures."

"Dynamic sales director whose secretary, early 20s, must look after him and three managers. All pleasant people and ingenious exclusion by far in their 40's, so their secretary must be the type who is adaptable and enjoys working for mature, silver-tongued gentlemen—just like Dad."

Could he have explained why the gentleman searching for: "... a well-groomed, adaptable, charming secretary, radiating savoir-faire and finesse..."

insisted that she should be "23-ish"? Why exactly 23-ish? Why not 21-ish? Or 24-ish? Or for that matter, 46-ish? Such precise specifications for his dream girl.

I did perk up one morning when I read: "Senior Secretary. Bright and conscientious." Only to be dashed by the qualification:

"Minimum one year's experience."

My twelve years suddenly seemed a crippling handicap. In the old days Mothers were warned not to put their daughters on the stage. Judging by the advertisements, it must be safer nowadays than becoming a secretary.

Sometimes all you have to be is young, even if totally devoid of skill or talent. Under the heading:

"Youth on your Side" the advertisement sympathises: "How often have you wanted to work for a director only to be told you are too young or too inexperienced? A West End company needs such a secretary. Age 18 plus. Salary £2,000."

So much for my glowing testimonials. At 40 plus, who needs them?

But perhaps the most subtle and ingenious exclusion by far in their 40's, so their secretary must be the type who is adaptable and enjoys working for mature, silver-tongued gentlemen—just like Dad."

Secretary to Chief Executive. Interesting, varied, responsible position. Plus the opportunity of taking ballet classes during the lunch hour."

As my family pondered the spectacle of their mother preening herself at the dance studio in leotards and pumps, hysteria overwhelmed them:

"During lunch" said the Sec. as she shook her grey locks. "I'll keep all my limbs very supple."

"If I get this appointment—and nobody mocks—I'll perform entrechats at the double."

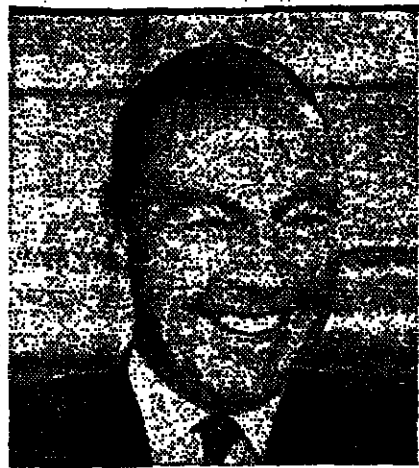
How to miss opportunities

Every department of every business needs the Financial Times—daily. Because they all need up-to-the-minute business intelligence.

Circulating one or two copies just isn't enough. That's why all departmental heads and key employees should have their own copies of the Financial Times.

In these competitive times everyone in business needs the Financial Times

مكتبة الادب



**-Richard Farmer,
Managing Director of
Atlas Express Group
Limited at Rotherhithe.**

Atlas Express is one of Britain's largest independent and privately owned freight carriers.

In 1863, village carriers still carried goods from street to street, while the new railways carried them from town to town.

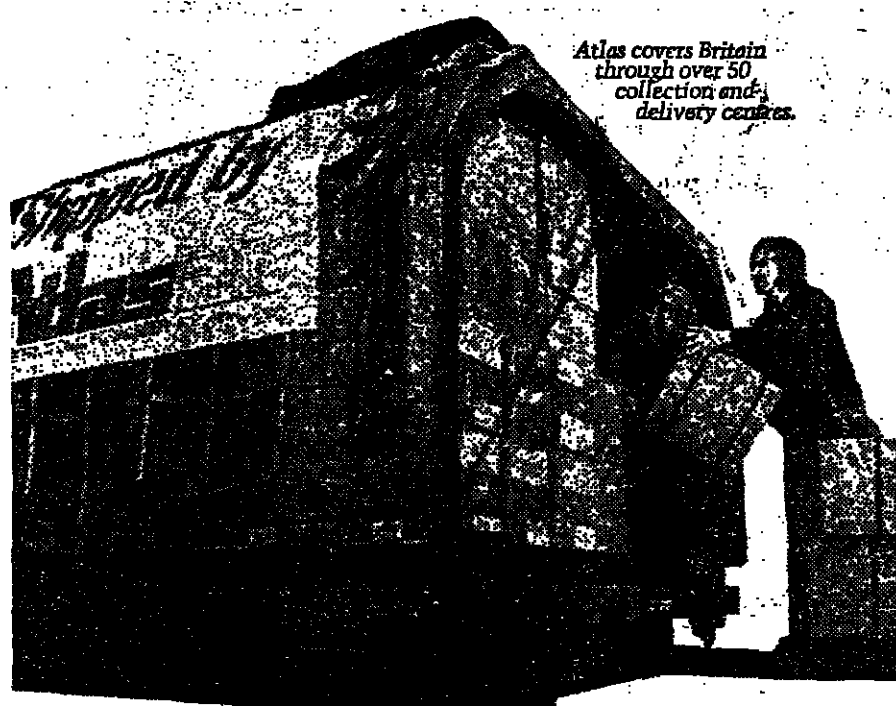
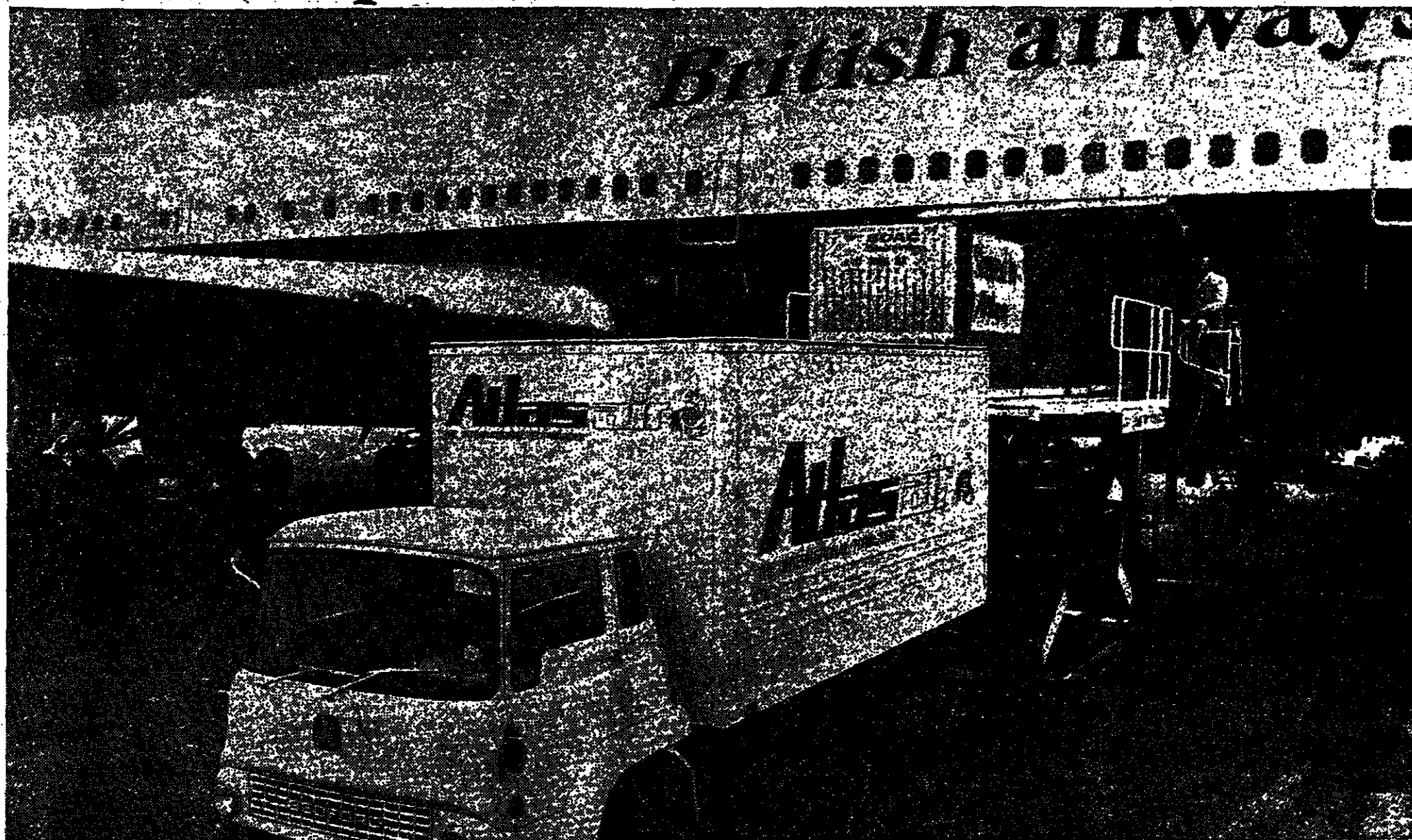
What was needed was a fast, efficient service for getting goods from a street in one town to a street in another.

Atlas Parcel Express, as it was then called, was among the first to fill the gap.

Growth and modernisation

Shortage of manpower during and following the First World War drastically affected the company and when Richard Farmer joined in 1935, during the chairmanship of his father, it had still not recovered fully.

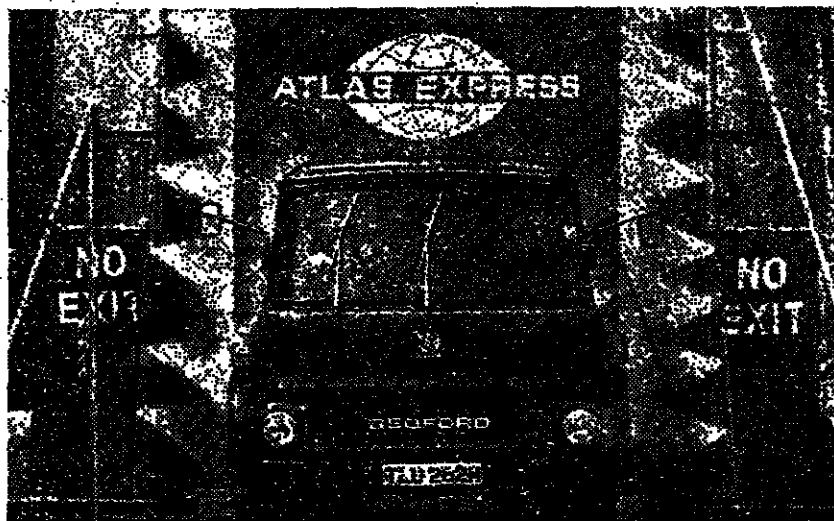
"Midland Bank plays an essential part in our organisation-just as we play an essential part in world trade"



Atlas covers Britain through over 50 collection and delivery centres.

He and his fellow directors set about modernising the company with the help of Midland Bank.

"But modernising a transport business," says Richard Farmer, "involves hefty capital



One of the Atlas vehicles passing through an automatic cleaner.

outlay for depot space, buildings and vehicles.

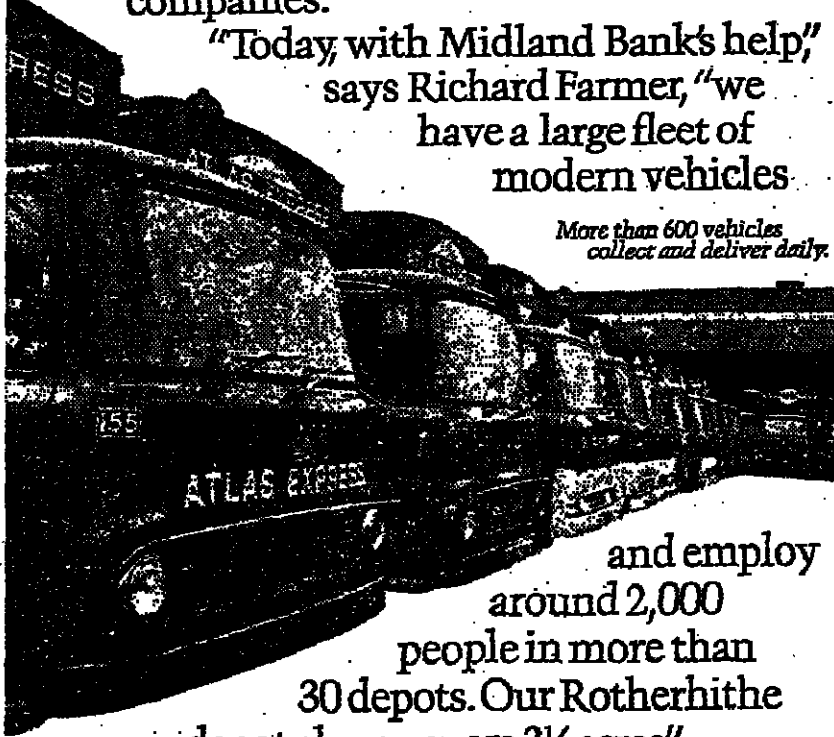
"In 1921, the company had to raise £2,250 in 5s. shares—a largish sum for those days—in order to continue. The shareholders responded, and since then they and Midland Bank have provided all the resources needed for our expansion."

International expansion

1947 was a major turning point for Atlas Express, as it then found itself one of the country's few sizeable independent freight companies.

"Today, with Midland Bank's help," says Richard Farmer, "we have a large fleet of modern vehicles

More than 600 vehicles collect and deliver daily.



and employ around 2,000 people in more than 30 depots. Our Rotherhithe depot alone covers 3½ acres."

Atlas Express delivers and collects world-wide through a large international network of freight agents, and has set up two other companies. Atlas Air, at Feltham, to handle purely air freight, and Eurofreight, to handle cargo on a continental basis.

"Midland Bank has always given us magnificent service," says Richard Farmer. "In fact all our directors and virtually all our staff here bank at the Midland privately.



Atlas Air HQ is Britain's first specifically designed consolidation centre.

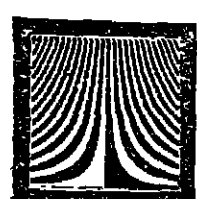
"But most of all, the Midland has enabled us to grow on the scale needed for an international freight business—without ever having to go outside our close relationship with them for financial help or services."

As every successful business knows, expansion brings its own problems. It calls for new kinds of financial service. If it's your problem, why not talk it over with your local Midland manager?



Midland Bank Group

Principal trading companies: Midland Bank Limited, Clydesdale Bank Limited, Clydesdale Bank Finance Corporation Limited, Clydesdale Bank Insurance Services Limited, Scottish Computer Services Limited, Northern Bank Limited, Northern Bank Development Corporation Limited, Northern Bank Executor and Trustee Company Limited, Northern Bank Trustee Company Limited, Midland Bank Trust Company Limited, Midland Bank Finance Corporation Limited, Forward Trust Limited, Midland Montagu Leasing Limited, Griffin Factors Limited, Midland Bank Trust Corporation (Jersey) Limited, Midland Bank Trust Corporation (Guernsey) Limited, Midland Bank Insurance Services Limited, The Thomas Cook Group Limited, Thomas Cook Limited, Thomas Cook Overseas Limited, Thomas Cook Bankers Limited, Samuel Montagu & Co. Limited (Incorporating Drayton), Drayton Montagu Portfolio Management Limited, Northern Bank Finance Corporation Limited, Midland Montagu Industrial Finance Limited, Jersey International Bank of Commerce Limited, Bland Payne Holdings Limited, Bland Payne Limited, Bland Payne Reinsurance Brokers Limited, Bland Payne (UK) Limited, Southern Marine & Aviation Underwriters Inc., Bland Payne Australia Limited, Guyerzeller Zuercher Bank A.G.



The Technical Page

EDITED BY ARTHUR BENNETT AND TED SCHOETERS

ENERGY

Question of make or break

IN ONE of the most thought-provoking studies it has issued in recent years, Frost and Sullivan has predicted that to match the 20-fold growth in nuclear power over the next ten years, the utilities of the countries involved will have to find a staggering £58bn.

This estimate is based on capacity at the start of the year of 18,000 MW with 30,000 MW on order and 270,000 MW predicted to be ordered by 1985.

By far the largest share of the total will be taken up by France and Germany with 29 and 26 per cent. respectively, followed by Italy (17), Spain (10), Sweden (8), Belgium (4) and Britain with only 2 per cent.

France has encountered less opposition from the environ-

mental lobby than any other country and nuclear power could account for over 80 per cent of total power generation by 1990 compared with a mere 4 per cent. now. In Britain, growth is predicted to be extremely slow by comparison with only 16 per cent. atomic electricity in 1985 against 9.3 in 1970.

Capital requirements for the whole of Europe will vary between £5,250m. and £6,500m. a year to 1985, cost of a nuclear station being assumed at about £238 per kW, excluding the first load of fuel—also a major factor, especially in the light water reactors which will dominate the scene till the end of the century.

The report details the various shares of physical plant com-

ponents in the annual £3,600m. market where turbine plant at £1,090m. a year is the most important.

Local European industries will provide between 50 and 85 per cent of the total reactor package, according to the strength of their local industrial base and the attitude of their Governments to foreign imports.

Whether the analysts will have to amend this report in a year or so because of U.S. experience is a moot point. It should be remembered though that U.S. resources in fuels other than atomic are far higher than those of the European Continent.

Frost and Sullivan, 110, Strand, London WC2R 0AA. (01-836 8818).

ELECTRONICS

Replacing gold in electronics

FOR PLATING on semiconductor devices, printed circuit boards and connector contacts, a low boron, phosphorus-free electroless nickel process, Niposit 468, is available from Shipley Chemicals, Hummer Avenue, Coventry (0203 457203). Deposits are at least 98.5 per cent. pure nickel and the remainder boron, says the maker.

Because of the improved ductility of nickel-boron deposits, their high temperature resistance (400-500 deg. C), good solderability and weldability, low electrical resistivity, high hardness and wear resistance, Niposit 468 is seen as a possible replacement for gold in numerous electronics applications, the company states.

COMPUTERS

More power at less cost

BY PUTTING together 32 computers on a chip in a stack called Hypercube, IMS Associates Inc. (Imail) of San Leandro, Calif., U.S., is offering the processing power of the old 360/65 (£1m. more or less) for only \$80,000.

And if the progress of solid-state technology needed to be rubbed in any more, the same company will stack together the same Intel 8080—but this time in a 132 array—to provide the processing power of the IBM 370/195 for \$400,000, or say one-tenth of the cost of that machine.

It is quite possible to continue up the scale and get a Hypercube which is far beyond the "processing size" of any computer so far proposed for commercial use—and still be in the cost area of a medium-scale conventional data processing system as proposed and installed by every manufacturer at the moment.

This development is the logical outcome of progress on microcomputers and, at the same time, array processor work first undertaken as a support system for the ABM. It would be useless if the designer had neglected the serious problem for the user of how to connect work into such a powerful system. But this key point has not been disregarded.

Varian cuts costs with technology

A BIG ADVANCE in minicomputer technology has been made by Varian with the announcement of its new V76 computer.

Varian designers have given the V76 a memory of 128K-bytes and have been able to pack this capacity on a single printed-circuit board. This development in random access memory (RAM) integrated-circuit design has produced the lowest-priced 640 nanosecond memory in the minicomputer industry.

Savings in manufacturing costs over a conventional panel core memory of equal capacity are considerable. So are the implications for the computer industry.

With the V76 to head its

current drive into the commercial marketplace, Varian is able to offer a complete small business system with the advantages of COBOL, RPG II and TOTAL for around £30,000.

Varian 64K semiconductor memory is an option for the V76 computers. It is a dual-port, random-access memory with a capacity of 65,536 16-bit or 18-bit words and is packaged on a single printed-circuit board. The 16-bit version is available without parity. The 18-bit version provides storage for words with two parity bits (one for each byte). Cycle time for both models is 660 nanoseconds with an access time of 560 nanoseconds.

The 4K random access-memory (RAM) used in the Varian design is a departure from other RAMs in that it utilizes N-channel architecture with a high-density metal-oxide-semiconductor (MOS) substrate. This new architecture provides about the same performance as a core memory of equal speed and capacity at one-third the cost.

Moreover, the dual-line package of the RAM permits the layout of the entire memory on a single V70 series printed-circuit board occupying only one card slot in the computer chassis.

THE SWIFT WINNING NORGAEN OLYMPIAN PLUG-IN-SYSTEM

Design Council Award 1974

COMPRESSED AIR PROCESSING EQUIPMENT

Varian is at Russell House, Molesley Road, Walton-on-Thames KT12 3PT. Walton 28871.

System B is highly tunable

EARLY results from operating System B on an ICL 2970 machine are better than expected, according to Basil Cousins, head of Computel which is using time on the 2970 at W. H. Smith and Son, Swindon.

Computel has given clients the opportunity to see Smith's new machine in operation and is offering 2800 facilities—the first commercial bureau to do so.

Computel was the first commercial bureau to use the George 3 operating system, and in the beginning throughput rates were as low as 10 jobs an hour in prime shift. By tuning the system Computel built up to 40 jobs an hour.

With System B the bureau expects the early throughput rates to be around 15 jobs an hour but within three years 80 jobs an hour should be achieved.

System B is the much-criticised operating system for 2800 machines.

Computel is at Eastern Road, Bracknell, Berks, 0344 23032.

By agreement between the Financial Times and the BBC, information from The Technical Page is available for use by the Saver is available to prevent Corporation's External Services loss of data in the event of a power failure.

POLLUTION

Measures density of smoke

SIEMENS has a smoke density monitor for use in the ducts and chimneys of small- and medium-capacity industrial plant.

Continuous-measuring, it has a combined transmitter/measuring head and separate detector. The former requires a 110 V or 220/240 V, 50 Hz mains supply and both units have facilities to use a low-pressure air source for scavenging and cleaning purposes.

Two beams of white light, one passing through the smoke or dust, and one reference beam are compared.

When the measuring beam's intensity is reduced by smoke or dust, the reference beam's intensity is equally reduced. This reduction of intensity is a measure of the smoke or dust content. The beam comparison is made by a photocell and amplifier alternatively measuring the relative light values. The measuring head produces a linear output signal of 4 to 20 mA proportional to a selected measuring range of 0.100 per cent, 0.50 per cent, and 0.25 per cent.

opacity. The output signal can be fed to controllers, indicators or recorders. The measuring head can also be calibrated for a given level of concentration, which if exceeded, causes the monitor to produce an alarm signal.

Siemens, Great West House, Brentford, Middx. (01-836 9133).

INSTRUMENTS

Accurate gauge head

A NEW universal "miniature length measuring instrument" in the form of a digital gauge head is being brought to the market by Dr. Johannes Heidenhain. This instrument, for application in workshops and standard rooms, surpasses dial test indicators, vernier calipers or analogue measuring heads both technically and economically. The digital gauge head is also designed as a measuring system for length measurement on smaller machines, micrometer stages, coordinate tables, cam inspection, etc.

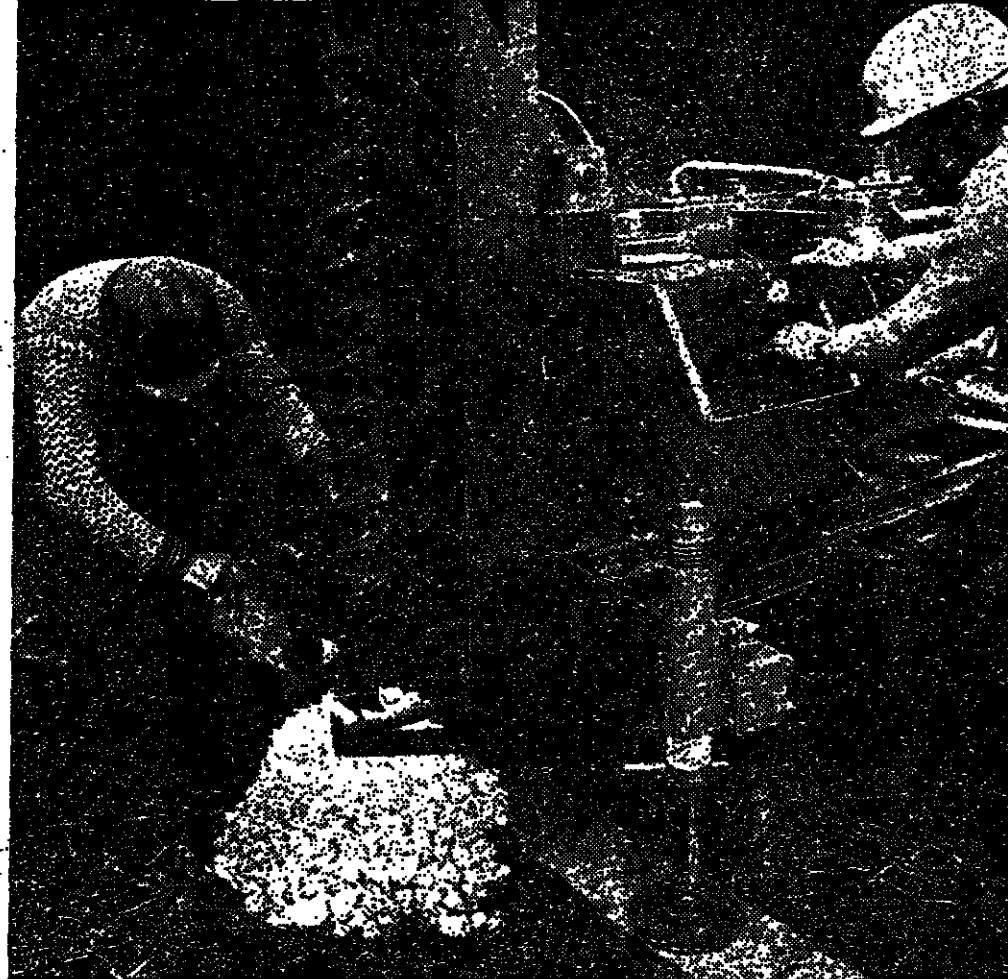
The measuring range of the digital gauge head MT 10 is 10 mm. The resolution (digital step) in conjunction with the appropriate counter is 1 micrometre. The measuring accuracy

of the complete system, that is, digital gauge head with counter, is ±1 micrometre. A genuine incremental design principle and the very minimum of mechanical components enable a high degree of accuracy to be constantly maintained for an unlimited time. A special feature is the remarkably small size of the main body (57 x 30 x 12 mm.) which simplifies application on multiple measuring devices having narrow clearances. The clamping shaft has a diameter of 8 mm, which enables further utilisation of general measuring equipment and fixtures.

Measured value is indicated by a five-digit, seven-segment LED display with arithmetical sign and decimal point. Character height 13 mm.

As an option, the counter can be supplied with a printer output for electronic processing of measured values. A special advantage is the simple zero reset which is carried out by merely pressing the reset push-button at any random position within the measuring range, thus eliminating tedious adjustment.

Longer measuring lengths are covered under development and gauge heads with measuring range of 30 mm. will shortly be available. Heidenhain (GB), 202, London Road, Burgess Hill, Sussex RH15 9RD. Burgess Hill (04446) 3366.



This rotary drilling rig is the latest to be produced by Pilon Engineering. The company says it is designed for the larger diameter diamond core drilling operations. In addition it will drill up to 8 inches diameter rotary percussion air-blast holes using a down-the-hole hammer — and is therefore well suited to shallow mineral

exploration. Called the Pilon Traveller 30 it is hydraulically operated and has a lattice mast carrying a rotary head suitable for coring, augering and rotary percussion drilling. The drill is powered by a 30 hp air-cooled diesel engine. The equipment is supplied as standard on a two-wheeled trailer fitted with three stabilising jacks. Pilon is a member of the Costain Group

RADIO & TV

Speeds the outside broadcast

SPECIALIST communications equipment which could make a significant contribution to the design approach in the multi-million-pound TV outside broadcast and sound and TV studio market has been displayed by Link Electronics.

The 700 Series equipment covers audio communications products which can be built up into complete communications and talk-back systems, as well as two solid state telephone exchanges for use in both outside broadcast vehicles and studios.

The significance of the new equipment is such that Link has established a complete new communications group at its factory in Andover.

Link's decision to design and manufacture such equipment was based on a number of

factors—increasing demands on space utilisation, particularly in television mobiles and the growing importance of comprehensive talk-back systems as required in broadcasting.

There was no commercially available range of standard compact and modular equipment which was flexible enough to satisfy the needs of broadcasters and systems equipment manufacturers.

The equipment was initially developed by Link for use in outside broadcast units and television studios that they were building. It was then refined into a range of standard equipment which could be offered generally. Link has already supplied several systems so far, and is also using the products on two current projects — an outside broadcast unit for Radio Telefís Éireann in Dublin and for all the talkback communications at the London control centre at the new Forces Broadcasting Network.

Link Electronics, North Way, (0223) 55955.

Pye move in cable TV

LABGEAR (Pye Group) is marketing jointly with Belling and Lee the full range of Belling-Lee cable television distribution equipment and related accessories.

From January 1, 1976, Labgear will take sole responsibility for the direct marketing and service of all cable television distribution equipment and accessories carrying either brand name.

Belling and Lee will continue to design, manufacture and supply passive electro-mechanical cable television accessories to contract customers with sales contracted under the name of the customer organisation.

Pye, St. Andrews Road, Cambridge CB5 1DP. Cambridge (0223) 55955.

SAFETY

Detector is produced cheaply

A SILICON chip, a bicycle handle grip and a rubber bell from a cistern have contributed considerably to the development of a Southern Gas leak detection unit.

Its scientific services department based in Poole has built a lightweight and low cost detector for combustible gases and because the number required at the moment in the region is considered too small to be worth putting to an outside contractor, the units are being built in-house.

The grip goes on the handle of the walking-stick type probe, at the end of which is the silicon device, protected by the rubber bell.

The detector is heated by a current from a battery and provides a measurable resistance. If a gas such as methane is present, the resistance alters to such an extent that the change can easily be detected and an alarm given.

Use of simple components has kept down the cost of the unit which is capable of detecting the presence of combustible gases in air from about 5 to 1,000 parts per million.

Southerngas, 164, Abore Bar, Southampton. (Southampton 775544.)

CONTRACTS AND TENDERS

PREQUALIFICATION NOTICE 1001

TURKIYE SELULOX VE KAGIT FABRIKALARI

IZMIT KOCAELI TURKEY

Integrated Forest Products Mill, Balıkesir, Turkey

SUPPLY OF MATERIALS AND EQUIPMENT

Türkiye Selulox Ve Kagit Fabrikalari (SEKA), an enterprise organized and existing under the Laws of Turkey, will build an integrated forest products mill near Balıkesir. The plant will produce approximately 105,000 m³ of sawwood annually together with 100,000 metric tons of newsprint annually using chemomechanical refiner pulp and purchased semi-bleached sulphate pulp.

Vendors interested in prequalifying for bidding on the supply of materials and equipment invited to apply by air express for "Prequalification Inquiry 1001" from

SANDWELL AND COMPANY LIMITED

1550 Albermar Street

Vancouver, British Columbia

CANADA V6G 1A1

Attention: Mr. M. E. Thomas

Copies of the application shall also be sent to SEKA as follows

Türkiye Selulox Ve Kagit Fabrikalari İsteşme

Genel Müdürlüğü

İzmit, Kocaeli

Turkey

Attention: Mr. Huseyin Uyar

Applications for "Prequalification Inquiry" 1001 close at noon on 5 DEC 1975 at Sandwell's Vancouver Office. All applications shall be in English.

To enable construction schedules to be maintained top priority has to be given to the following major equipment: Chippers, Barkers, Power Boilers, Turbogenerators, Refiners and Newsprint. Consumers wishing to tender on this type of equipment should indicate this in the Prequalification application.

ADVERTISEMENT FOR TENDERS FOR ELECTRICAL INSULATORS

Ente Nazionale Energia Elettrica di Somalia wish to invite tenders for the supply of approximately 20,000 sets of porcelain outdoor insulators for the development of their 33kV, 15kV and 380 volt power system. Copies of the specification are available to tenderers who should write or telex quoting reference 7506/5/1 to:

EWBANK AND PARTNERS LTD.,
Prudential House,
North Street, Brighton,
Sussex BN1 1RW,
United Kingdom

OFFSHORE FINANCIAL CENTRES

AMBASSADOR BEACH HOTEL, NASSAU
11 & 12 NOVEMBER 1975

A conference organised by the Financial Times and The Banker

- Chairmen:
- Mr T B Donaldson
The Central Bank of the Bahamas
 - Mr R W Bryan
Bank of Montreal (Bahamas & Caribbean) Limited
- Speakers will include:
- TAX PLANNING AND BANK SECRECY
 - Mr J F Chown
J.F. Chown and Company Limited
Tax Correspondent, Financial Times
 - OFFSHORE CENTRES AND THE PRIVATE INVESTOR
 - Mr Gordon W P Camble
The Royal Trust Company
 - THE EUROMARKETS AND OFFSHORE CENTRES
 - Mr John Kitchen
Walsaco Trust Limited
 - EXCHANGE CONTROL
 - Mr Anthony Parker
Consultant to the Bank of Bermuda Limited, Hamilton
 - RECENT LEGAL DEVELOPMENTS
 - Mr W A Macdonald, QC
McKinnon, Birch
 - A COMPARATIVE STUDY OF TAX
 - Mr W Penman Brown
Candover & Bank (Jersey) Limited
 - PANAMA AS A FINANCIAL CENTRE
 - Dr Antonio Dudley
Executive Secretary of the National Banking Commission, Republic of Panama

The fee of U.S.\$50.00 (£138.00) covers all refreshments, cocktails, lunches, a cocktail party in the evening of 11 November, conference documentation, including OFFSHORE INVESTMENT CENTRES.

To be completed and returned to:
The Financial Times Ltd
333 Strand, London WC2R 0LT Telephone: 01-836 5444 Telex: 27347
Enclosed is my contribution to OFFSHORE FINANCIAL CENTRES CONFERENCE
FROM: NAME PLEASE
Name _____
Title _____
Company _____
Address _____
Please send me further details ☐

مركز الفان



Building and Civil Engineering

Pipelaying and sewer work

PIPELAYING and other civil engineering contracts totalling more than £3m. are to be started shortly by H. O. Andrews of Oakwood Lane, Leeds.

The largest, worth over £1.7m., is for the construction of the Hyndburn Valley Sewer for North West Water Authority. Eight river crossings, one through a weir, form part of the contract and there is a substantial amount of pipe jacking, pipeline in heading and tunnel work using 1,520 mm internal diameter precast concrete bolted segmental rings. Consulting engineers are J. D. and D. M. Watson.

Other contracts for H. O. Andrews include construction of the Radford four sewer for City of Coventry (£750,000), trunk sewers for Washington Development Corporation and twin reinforced concrete culverts in a sheet piling cofferdam under a canal for Rushcliffe (Notts) District Council.

£3m. worth for Turriff

TURRIFF Corporation has won contracts worth over £3m. Among them is a District Centre at Longsight for the Manchester City Council worth £750,000. Another contract worth over £1m. is for the Ministry of Defence at Longtown, Cumbria, and a third job involves further work on the Armstrong Cork flooring plant at Thornaby-on-Tees. The value of the first phase of this contract is £1m.

Bungalows in Bahrein

SYSTEM-BUILT bungalows are to be constructed in Bahrein by McPlan Homes a subsidiary of McInerney Properties under a £750,000 contract.

The bungalows will provide accommodation for pilot staff of Gulf Air, Bahrein's state-backed airline. Wall units, panels, joinery work and doors will be manufactured in Ireland and exported.

Warehouses and water jobs

TWO CONTRACTS, each worth about £700,000, have been awarded to Tarmac.

For the Wessex Water Authority, Somerset Recovery Division, the company is to construct a pumping station and rising mains as a development of the treatment plant at Clevedon in Avon.

The work involves construction of an underground pumping

station within a circular diaphragm wall, a rising main to the existing treatment works, an extension to the existing 1.5 metre diameter trunk sewer which is to be laid by pipe jacking, and the provision of an emergency overflow and a stormwater sea outfall.

The second job is a distribution warehouse at Tipton, West Midlands, for the Kwik Save Discount Group of Prestatyn. The design and construct project also calls for the demolition of existing buildings and site clearance, lorry park, general car park and roads and hardstanding.

Permanite, a Tarmac Group company manufacturing roofing materials, mastic asphalt and associated products, has been invited to take part in bridge surfacing trials in America which could open up a new field of operations for the organisation.

Permanite 60/Permanshield—a lightweight system of waterproofing which does not require an additional sand asphalt carpet—is one of several materials being used on a 380-metre long six-lane highway bridge in Peoria, Illinois.

The trials have been ordered by the Illinois Department of Transportation which is striving to improve the waterproofing on its bridges, many of which have failed after a comparatively short period of life. This has been due to deicing salts getting into the concrete fabric of the bridge causing failure.

First results of the trials are expected in about three months.

Valued at about £330,000 the contract covers the whole of the design, supply, erection and commissioning of underground skip charging pockets, skips of nine ton capacity, and surface discharge and conveying arrangements to link up with a raw coal

stocking out and reclaiming system planned for the future. Engineering design work is in hand and site installation and change over are planned for next summer.

Closed panels and skirting strips are BEAB approved and the connector radiators have been submitted for BEAB approval.

Sweden (Distributors), which is at Berkshire House, Queen Adelaide, Maidenhead, Berks, is looking for regional distributors/installers.

Sweden is on Maidenhead (0628) 37927.

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£3½m. jobs for Kyle Stewart

THE DEPARTMENT of the Environment has awarded two contracts to Kyle Stewart. One is for Extension 73 to the British Museum in Gt. Russell Street.

This contract, valued at £1.6m., is for the erection of a five storey block containing restaurant, exhibition galleries, stores, workshops and plant area and the adaptation and redecoration of an existing building. Work is scheduled to start soon and is expected to last for two years.

The other contract, worth £350,000 at the National Physical Laboratory, Teddington, calls for the conversion of an existing wind tunnel. This will be a steel framed building on concrete foundations. Work has begun and will last for 78 weeks.

Amalgamated Investment and Property Co., as agent for U.K. Prosident Institution, has placed a £1.5m. contract for the

construction of a part six and part four storey air conditioned office block at 164 Shaftesbury Avenue, 15/27 Earlham Street and 33/43 Mercer Street, London.

Construction will be in reinforced concrete on piled foundations with elevations in faced brickwork with bronze anodised aluminium windows. Work has begun and is due to be completed in 95 weeks.

A SUB-CONTRACT worth £4.4m. for earthworks, roads and drainage for the Lagos International Trades Fair has been awarded to George Wimpey and Co. (Nigeria), by the main contractor for the project, Energoprojekt Engineering and Contracting Company, of Belgrade, Yugoslavia.

The work involves the construction of 30 km. of 6 and 7 metre-wide asphalt roads, together with a storm water drainage scheme.

Design is by Energoprojekt to the requirements of the Federal Ministry of Trade and the work will be supervised by the Federal Ministry of Works. The fair is to be held in late 1976 or early 1977.

Wimpey in Nigeria

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Road work in Hastings to start

FIRST stage of the Hastings, Sussex spine road is to be started next month. Mears Construction has won the £698,000 contract from East Sussex County Council.

An 18-month job, the contract calls for a 2 km. length of single carriageway road, located between the southern end of Castleham Road on the Castleham Industrial Estate and a point on the A2100, 500 metres west of its junction with the A21. The contract includes the construction of a bridge over the B2159 at Battle Road.

The road will serve the Castleham Industrial Estate and proposed adjacent housing developments. Future phases will extend the road to the east of Bexhill and to the A21 north of Hastings.

Pressure tests oil pipe joints

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Houston, Texas. It consists of pneumatic and hydraulic systems which create pressure around the connection to be tested.

The metering unit is suspended from the pressure chamber which is clamped round the joint. About 6 ounces of fluid are pressurised up to 20,000 psi in the chamber, and if there is a leak in the connection, the meter detects the drop in pressure.

It is claimed a leak as small as one drop of water in 15 seconds can be found. The small amount of fluid ensures there is no stored energy and the outside test eliminates the possibility of internal scale sealing a small leak, which might be expensive to correct later. It also avoids damaging internal coating and costly fishing for tools lost in the pipe.

Desalination and heat exchange

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Cold-proof garments are light

POLARSHIELD garments use a principle employed in space blankets. The inner side of the material has an aluminised backing applied directly to it. This reflects a great part of the body heat and keeps the wearer warm without being in any way bulky or obstructive.

The material is waterproof, windproof, and has a very high resistance to tearing. All the garment seams are sewn and have a double proofing protection on the inside. The clothing is washable in the normal way and is extremely light.

Following sample testing, an initial production run was made up which has been sold in Aberdeen for use on the oil rig.

Acceptance has been good and there have been no major problems.

Garments are extremely light, flexible at all temperatures and very hard wearing. These points coupled with the fact that repairs, either by sewing over a tear or by sewing in a patch, are easy to make.

Polarshield is at Juliat's House, Beech Lane, Woodcote, Oxon. Checkendon (0491) 681633.

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FINANCIAL TIMES SURVEY

Monday November 3 1975

COMMERCIAL VEHICLES

The new truck models that have been introduced in the last year have arrived on the market at a time when it was least able to absorb them. Sales have fallen off and recovery appears still to be some time away.

Major problems all round

By Terry Dodsworth

THE LAST 12 months have not proved a strikingly impressive example of the forecasters' art in the motor industry. While the world has slipped into recession, new products, representing major investments, have rolled off the truck production lines across Europe, dropping into the market at the one moment when it was least able to absorb them. With productive capacity swinging sharply into surplus, extensive price cutting and discounts are now trimming the margins of the major producers. Recovery, according to the manufacturers, is still some time away.

The activity in new models has been particularly pronounced in Britain, for reasons that go back to the reluctance of British Governments in the 1980s to step up the weight limits on heavy trucks. This gave the Continental manufacturers a big technological lead, and which the British companies, because of their traditional concentration on third world markets rather than Europe, did very little to combat. The

eventual decision to put up U.K. weight limits to 32 tons thus brought a flood of foreign manufacturers into Britain, and the new ranges of vehicles now coming on stream represent the response to this invasion.

In effect, what these models mean is that the U.S.-controlled multinationals have at last decided to enter the European heavy goods market in earnest. Ford, Bedford and Chrysler all tend to concentrate their truck production in Britain, where they have applied their American style value engineering techniques to make a relatively wide range of vehicles in a utility world best suited, it used to be thought, to the U.K. market and the Third World. Until recently in exporting terms the investment in the lines across Europe, dropping into the market at the one moment when it was least able to absorb them. With productive capacity swinging sharply into surplus, extensive price cutting and discounts are now trimming the margins of the major producers. Recovery, according to the manufacturers, is still some time away.

Reserves

Entry into the EEC has changed all that, and a shift of thinking has been evident for some time at Bedford and Ford in particular. Both companies have been building up distribution systems in Europe on the back of their small and medium range vehicles, and both have proved that the price competitiveness of British-produced vehicles can win sales in the EEC. Ford's Transit, for example, has now established

itself in all the major markets, and Ford claims that out of a total European market of 42,000 in this range of light and medium weight vans, the Transit has an 18.8 per cent share.

The addition of new heavy trucks to the ranges offered by Ford, Bedford and Seddon Atkinson (taken over a year ago by International Harvester), gives them access to a sector of the market which, despite the present recession, should in the long term prove to have the most growth. No major manufacturer can readily afford to ignore the heavy goods sector—Fiat has also emerged this year with a new range, the 170/190—and Ford and Bedford have timed their entry at a point when they already have the well-established distribution systems necessary to compete in this field.

Like the American-owned British companies, British Leyland has also begun to bring Europe within its sights. Part of Lord Ryder's plans for the future of the company were that the truck and bus interests should aim to increase their penetration of the Western European market from their present 1 per cent to 5 per cent over the next eight years. In order to help BL will get £230m. for investment in new plant, engineering and test tracks in the truck and bus sector.

The implication of such policy developments is that the future lies with the big battalions. Indeed, there has been a classic example this year of the thinking of the truck industry in the

NEW REGISTRATIONS - 9 MONTHS STATED					
Manufacturer	Car Derived Vans and Pickups Jan-Sept.		Other Goods Vehicles up to 3½ tons Jan-Sept.		All Other Goods Vehicles Jan-Sept.
	1975	1974	1975	1974	1975
BRITISH					
Bedford	11,243	11,006	11,347	14,512	8,729
British Leyland	25,168	22,601	15,895	15,114	10,745
Chrysler	—	—	7,485	8,970	4,201
Ford	12,851	16,651	27,172	28,434	11,107
ERF	—	—	—	—	1,205
Foden	—	—	—	—	740
Seddon Atkinson	14	25	46	47	573
Others	49,276	50,283	61,945	67,077	39,368
Total British	—	—	—	—	40,366
IMPORTED (Major marques)					
DAF (Holland)	22	387	—	—	414
Chrysler (France)	4,257	8,794	—	—	222
MAN (FDR)	—	—	—	—	94
Magirus Deutz (FDR)	—	—	726	516	697
Mercedes-Benz (FDR)	—	—	4,193	6,316	—
Volkswagen (FDR)	—	—	1,351	1,778	284
Fiat (Italy)	—	—	1,082	744	—
Mazda (Japan)	—	—	2,187	2,474	—
Toyota (Japan)	—	—	—	—	561
Scania (Sweden)	—	—	—	—	1,710
Volvo (Sweden)	—	—	—	—	4,989
Total Imported	5,976	8,276	9,760	12,251	4,129
GRAND TOTAL	55,252	58,559	71,705	79,328	43,497

Source: Society of Motor Manufacturers and Traders.

completion of the merger between Fiat and Magirus Deutz in Germany which brings together a production organisation straddling the three major Continental countries. The merger, concluded through Iveco, which is 80 per cent owned by Fiat, and 20 per cent by KHD, means that Fiat has built up a total truck capacity of about 110,000 units a year, based on Fiat and OM in Italy, Unic in France, and Magirus Deutz in Uim.

Fiat argues that such an organisation gives it the benefit of large-scale economies in buying components, and that over the longer term both design and manufacturing facilities can be rationalised to get longer production runs of major sub-assemblies and even finished products—although the heavy truck range will be made in both Italy and France. One of the advantages of the pan-European concept may come in export markets, for Italy will be charged with exporting the heavy trucks to areas where Fiat has been

strong in the past, and Unic will export to its own spheres of influence.

But what does this mean for the smaller truck producers? This year again there have been two examples of the problems facing the specialised concerns, when both Fodens and DAF, the Dutch manufacturer, ran into trouble and had to be rescued.

The problem for small producers, particularly at times of acute competition as at present, is to maintain margins in the market place against large manufacturers who can trim prices because of greater productive efficiency. These difficulties are made more acute when manufacturers, like Fodens and DAF, are based in wide-open markets where there is considerable international opposition: unlike the successful Swedish producers, Volvo and Scania, they do not have the reassurance of a strong presence in their home market to fall back on.

One way of combating size is the "proprietary" method of production, whereby the assembler buys most of the major components from outside suppliers, and simply aims to get the optimum size of assembly plant while producing the quality in the final product by the excellence of the assembly method. There is considerable debate about the merits of this system, which is employed successfully by Volvo on its car side. Many British truck companies have used it in the

past quite happily, and despite the rash of mergers over the last decade, major component businesses—engine and transmission manufacturers in particular—continue to thrive.

Fodens, in fact, was in the process of adding a "proprietary" type assembly capacity to its plant in Sandbach when it ran into financial trouble. Over the years, Fodens' strength has been based on a contrary philosophy—that it should make as many of the major components in its vehicles as possible, thus ensuring a high-quality, high-premium truck. But it came to believe that the only way to grow from its very limited size, and thus protect itself from larger predators, was to graft on a production unit which was flexible enough to produce a straightforward assembly line vehicle, or one containing a high degree of special, customised parts.

Fodens had the mischance to bring in its new plant—one of the most sophisticated in Europe—when the market had gone flat, and a quick recovery for the company undoubtedly depends on an improvement in the home market. One of the lifelines for the company this past year has been in the Middle East, where Fodens has had a long history of exporting to the Gulf States, and where its heavy, premium trucks are ideal for the conditions; but the debate about the merits of this system, which is employed successfully by Volvo on its car side. Many British truck companies have used it in the

with the Government, has hit

York Freightmaster semi-trailer vans cut costs-increase profits.

York Freightmaster is Europe's biggest selling frameless trailer van.

Freightmaster increases profits by cutting distribution costs. It carries more every trip; loads more easily; turns round faster; reduces load damage; keeps drivers driving and trucks earning money; serves as a mobile warehouse and enhances prestige on the highway—and in the High Street.

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On the fully laden articulated outfit, 'FREIGHT TRANSPORT ASSOCIATION' engineer Ron Rider confirms that a 5% fuel saving was obtained.

Over the York programme, 'drag baffling' AIR-O-FOIL gave an average of 10% more miles to every gallon.

10% fuel saving means 19% more profit. If you have a 32-ton artic travelling 50,000 miles a year, averaging 7 miles per gallon and you buy diesel at 46p per gallon, you will spend £2,286 per annum on fuel. Average running costs for an outfit like this will be around £13,500 per year. Allowing 11% operating profit (which is the target today, we are told) that's £1,688 profit per year.

York AIR-O-FOIL saves 10% of your fuel bill—that's £228 so you increase your £1,688 profit by £228—that's a sizeable 19%!

At a time when rate increases look pretty remote this kind of cost reduction is the only way to improve your fortunes.

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The day that your AIR-O-FOIL pays for itself will depend on your fleet and its work pattern. The harder you work it the quicker it pays. Average use puts you in pocket within 5 months.

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Optional on the AIR-O-FOIL is a 5' x 2' opalescent perspex illuminated sign panel on which you can proclaim your Company name—day and night.

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COMMERCIAL VEHICLES II

Bus operations at the crossroads

THE LAST 18 months have been dismal ones for the bus industry on every side. Operators have watched costs swell by undreamt of amounts while Government pressure on spending and the law of diminishing returns as far as fares are concerned have limited their room to manoeuvre: passengers have felt the impact of heavily rising fares nonetheless and suffered from yet more service cuts with the threat of worse to follow on both counts; and vehicle manufacturers have failed to meet the demand for new buses —and spare parts for existing ones—in a way which has compounded the difficulties being felt all round.

For the operators, the next few days could well be crucial ones. This month should see a conclusion to the negotiations between local authorities and central Government over the level of revenue subsidies to bus operators in the next financial year. And on the outcome of these depends the short-term future, at any rate, of bus services in many parts of the country.

That the central Government far this year—have already been raised to what many authorities adhere to the guidelines, and there have been signs that some will not—basically hit the main conurbations, and London in particular, with rural areas and the smaller towns better off than this year. In the past, the conurbations have received very much the larger part of the allocation. London's share this year was over 60 per cent, with the metropolitan counties served by the six passenger transport executives receiving around a third of the total. The so-called "shire" counties, housing more than 60 per cent of the population of England and Wales and served largely by subsidiaries of the State-owned National Bus Company, received only 7 per cent.

National Bus itself, which has a statutory duty to break even every year, has reported a £12.3m. loss in 1974 that, along with increased capital expenditure, consumed its entire £20m. cash reserves, leaving it to raise 90 to 95 per cent of its revenue from passengers compared with around 80 per cent for London Transport and the PTEs, under 75 per cent for British Rail—and only 50 per cent for many bus operators elsewhere in Western Europe. It is small wonder that London fares are so much lower than those on most National Bus subsidiaries, and services so much better (even if they may compare unfavourably with those of some of Western Europe's other major cities).

The campaign to get the grants figure raised has not been confined to the bus operators. Mr. Jack Jones, general secretary of the Transport and General Workers Union, last week warned that busmen might take industrial action to fight the redundancies threatened by the cash cuts. And he asked for an urgent meeting with Mr. Denis Healey, the Chancellor, and Mr. Anthony Crosland, Secretary for the Environment (and, as such, Britain's transport and local government overlord). According to Mr. Larry Smith, the Union's national passenger transport secretary, something like 10,000 of the country's 300,000 busmen could find their jobs at risk within the next few months. The industry needed an injection of around £200m., he claimed.

Yet the news is not all bad—or, at least, it is better for some places than for others.

For the outbacks will—if local authorities adhere to the guidelines, and there have been signs that some will not—basically hit the main conurbations, and London in particular, with rural areas and the smaller towns better off than this year. In the past, the conurbations have received very much the larger part of the allocation. London's share this year was over 60 per cent, with the metropolitan counties served by the six passenger transport executives receiving around a third of the total. The so-called "shire" counties, housing more than 60 per cent of the population of England and Wales and served largely by subsidiaries of the State-owned National Bus Company, received only 7 per cent.

So, for passengers and ratepayers, the prognosis is bad. Making it worse are the problems of bus manufacturers—and this largely means British Leyland and its joint National Bus Company offshoot, Leyland National. For passengers, most noticeably in London but elsewhere too, are not only being faced with reduced services as part of a bid to cut losses; they are also being hit by the sheer unavailability of buses to allow schedules to be maintained. On any average working day, London Transport in particular is short of 400 buses out of a total fleet of 5,500. With a delivery delay of nine months for new vehicles from British Leyland, and up to 15 months for parts for existing vehicles in need of repair, LT has been driven to hiring coaches from other operators and putting 1,800 old buses considered to have reached the end of their economic life back into service in a bid to meet the gap.

The causes of the delay in part go back to the three-day week of two years ago, which severely hampered production, creating a backlog of orders whose effects are still very much being felt. Strikes and a lack of investment on the bus side of Leyland's business have not helped the situation (and it is noteworthy that the greatest share of Leyland's £120m. investment programme in the current financial year is to be concentrated on the truck and bus division).

Nonetheless, the problem, particularly acute as far as double-decker vehicles, where BL has a virtual monopoly, are concerned, cannot be laid solely at Leyland's door. Many parts are bought in from outside and there is, for example, a worldwide shortage of pistons. Inconsistent ordering patterns by the operators, both in terms of the actual placing of orders and the specifications laid down for vehicles, have not helped. A major factor has been the turnaround in union attitudes to one-man operation, now increasingly common, though London Transport has placed in abeyance its original decision to convert most of the capital's services to this system.

Initially, the unions strongly opposed one-man operation on double-decker vehicles, and this was a significant factor in the setting-up of the Leyland National operation, with its concentration on single-decker vehicles turned out by car-like assembly-line methods (which in turn represented something of a breakthrough in bus production). The result is that Leyland today has the capacity to build 2,000 single-decker buses and 1,000 single-decker coaches a year but only 2,300 double-deckers. The surge of demand which followed the unions' reversal of their stand against one-man operation of double-deckers, however, has brought the current order level to about 3,000.

It is against this background that other companies, both at home and abroad, have entered Leyland's traditional preserves. Both Dennis Motors, the small Guildford-based truck producer, and Fodens have announced tentative moves into the double-deck chassis business, while Metro-Scania, the Birmingham-based joint Scania/Metro-Cammell Weymann operation, and Alsia, a joint operation in Scotland by Volvo and the Alexanders bodybuilding business, have been achieving considerable success in this field, as they have in the single-decker market too. Despite the strong Swedish connections, however, both these companies' vehicles have a very high U.K. content, and bus imports have remained low.

Earnings
Last year, 1,404 buses, worth £1.1m., were imported into this country, half of them coming from West Germany. The first eight months of this year saw imports running at a slightly higher rate—906 vehicles worth £751,000 (with 419, worth £294,000, coming from West Germany, and 433, worth £226,000, coming from Portugal)—but only slightly so. Exports, by contrast, amounted to 21,758 vehicles worth £12.3m. last year (with Sweden the largest market in value terms though Turkey took more vehicles), while the January to August period saw 11,203 U.K. buses sold abroad to bring £11.1m. in foreign exchange earnings to this country (with a very significant proportion—some 1,900 vehicles worth £2.37m.—accounted for by orders from Iran). U.K. production this year has also improved: January-August saw 22,015 vehicles (13,850 of them for export) come off the production lines against 20,738 (13,475 of them destined to go abroad) a year before.

Meanwhile, the overall bus scene remains an extremely lively one. Passengers may face higher fares and, possibly, still fewer services, but there is some consolation to be found in the various means being looked at to improve their lot. Bus lanes in urban areas, speed-up journey times—and also possibly reducing operators' costs, since a faster journey can mean that fewer vehicles and men (an important factor when labour accounts for 70 per cent of overall costs) are needed to operate a particular route—are one obvious example. There are the various dial-a-bus experiments which seek to give the bus something of the flexibility of the taxi, the Superbus scheme in Stevenage New Town, with frequent flat-fare services tailored to the special needs of the area, the Runcorn busway scheme, the bold planning for bus operations in the new city of Milton Keynes, and a host of others.

Postbus services have been introduced in rural areas, and one group of villages in East Anglia without any public transport is being made the recipient of its own mini bus to be operated by the inhabitants themselves but serviced by National Bus and part paid for to start with by Norfolk County Council, which has strong hopes that viability will be achieved relatively soon.

On the traction side, experiments with electric buses continue, perhaps leading up to the day when the pollution, both aural and physical, of the diesel-powered city bus is a thing of the past—although results so far indicate a long wait ahead.

Thus, suggestions that bus operation is a dying industry can easily be refuted. NBC, for example, is actively involved in 18 new towns, putting a great deal of thought to the provision of public transport facilities where there were few or none before. And, with private motoring becoming more and more expensive and socially less desirable, buses could even have a growing role to play, at least in the long term, even though they are no substitute for the private car in many ways.

Yet, when all this is said, there is still a great deal which needs to be done. In many of those without cars, as less than it was a century ago thanks to the cutbacks in public transport, in others, catching a bus is a hazardous business, with no information on bus stops and the buses in themselves. Bus-rail links in many towns are practically non-existent.

There is a double need here. First, given that most of the significant economies in operation that can be achieved already have been, short of slashing services, and that fares rises may be near the point where they are self-defeating, a good deal more outside cash is required. In the present economic climate, this is clearly not on, but a system of costing which took account of the many indirect benefits of increased public transport use might make it more feasible for the future.

Second, it needs to be made a lot easier for people to use buses. This does not necessarily mean increased service frequencies, but it does mean more reliable ones. And it means giving a maximum of on-the-spot information to those who are passengers and a great deal more co-ordination of the type often lacking even between overlapping subsidiaries of National Bus operating in adjoining areas. Talking to those concerned with the running of bus services, the uniform characteristic of the men at the top is enthusiasm for what they are doing. But all too often that enthusiasm seems to be sadly lacking at the point where the passenger actually boards the bus.

David Walker

Problems

Fodens hard: now that it is set over the first nine months of this year have only been down by about 4.5 per cent; but within this total the heavy goods and building and construction work vehicles have lost a very large number of sales, while the smaller distribution vehicles have held their own relatively steady. Light van sales have suffered heavily—a 12 per cent drop to 71,700 registrations—which is probably due to their escalating prices.

Amid all this gloom, the one bright feature for British manufacturers this year is the way in which they have pushed back the importers' challenge. Although newcomers like MAN and Magirus Deutz have managed to establish a precarious foothold, the big importers—well.

Allocation

Next year, the tables are turned. The Government has made it clear that London and the metropolitan counties are to receive a great deal less of the allocation than in the current year, with the "shire" counties receiving more in cash terms than at present. (National Bus needs an additional £20m. at least.) Nonetheless, for both the National Bus routes and those in the conurbations, ratepayers are likely to find themselves forced to pay significantly more towards bus services than they have been if further service cuts are not to be made. In London, the Greater London Council has been issuing dire

Terry Dodsworth

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Heavy market in decline

BOOM TIMES have turned very swiftly to depression in the heavy truck market this year. According to some estimates, sales of trucks in the 30 ton category gross vehicle weight have suffered a 20 per cent decline across Europe on the levels of last year. The prospect, at least in the U.K., is equally gloomy, for only a radical improvement in economic conditions can pull back the business to the levels for which investment has been ploughed in over the last five years.

This investment has been very considerable indeed, bringing several competitors into the business for the first time. These include Ford, which is the biggest commercial vehicle producer in Europe, if car-derived vans are taken into the equation; Bedford, the U.K. subsidiary of General Motors; and Seddon Atkinson, now a subsidiary of yet another American multinational, International Harvester.

Alongside these are the established producers, Mercedes Benz, the biggest manufacturer of trucks over 31 tons in Europe, Fiat, which has put together a Europe-wide truck manufacturing concern, the Scandinavian companies Volvo and Scania which have chosen to concentrate on heavy trucks, and British Leyland. Among these Fiat has also just brought out a new range of vehicles.

The heavy investment in this sector is related to the long-term trends of the haulage industry, which show a gradual replacement of smaller and lighter vehicles by heavier trucks capable of carrying more. In effect, although the total load carried on the roads has increased considerably over the last decade, the number of trucks has remained relatively static, while their weight has increased. As trade within Europe becomes more cosmopolitan, and trading links with the Middle East and Africa extend along lorry routes (the road to Iran, while still hazardous, now takes enormous amounts of traffic), the heavy, containerised shipment is coming more and more into its own.

When trading forcing the rate of change and conditions are difficult, and despite obvious continuing difficulties in the heavy truck market, there are signs in the European approach (Britain, for instance, is still refusing to use the tachograph), manufacturers employed, a rate which does not appear to be now having to develop replacement costs), the vehicles with a European appeal.

For instance, Ford's new truck, the Transcontinental, is a vehicle which brings together many European talents. For its first venture into this highly specialised business, Ford decided to use a "proprietary" approach—that is, buying in most of the major components and concentrating its own efforts on assembly. Made by Dutch workers in Amsterdam, the trucks in fact utilise about 60 per cent British parts, including engines by Cummins (like Ford, another U.S. controlled operation), and cabs designed by Berliet, the French truck concern owned by Renault.

This kind of proprietary approach has been a feature of the British industry for many years, though less so on the Continent, where companies like Mercedes and Fiat have traditionally had a high degree of vertical integration. The result of this policy in Ford's case is a vehicle which has none laid on across frontiers, and the national or corporate peculiarities of style which used to characterise truck design; indeed, as far as new cabs in of general are concerned, there is a growing convergence of style cannot be held up indefinitely as a comparison of one of the new Fiat trucks with a Transcontinental demands that

partly because of the need, they move dealerships and spare facilities into territories where their trucks may be used, while hauliers want to buy vehicles, which can be assured of service hundreds of miles from home.

Given these conditions, the Scandinavians and Mercedes are already in strong positions, while Fiat, by virtue of its Iveco associate company, has a network of manufacturing and distribution establishments across Europe, concentrated on the three major areas of Italy, France and Germany. The multinational, particularly Ford and Bedford, are also in a strong position, since they have a presence, by virtue both of their car and small truck distribution, in most major areas of population.

Of all the big European companies, British Leyland possibly faces the largest challenge in this field since it starts from the lowest point, having concentrated on the third world and Commonwealth rather than Europe in the past. As it tries to get into Europe BL will face a tough challenge, for the stakes are high in the heavy trucks business, and competition intense—witness the problems Mercedes and Fiat have had in trying to enter the U.K. market. But one thing is certain: any company that wants to remain a major force in trucks until the end of the century cannot afford to be unrepresented in this, both the glamour and the growth end, of the market.

Terry Dodsworth

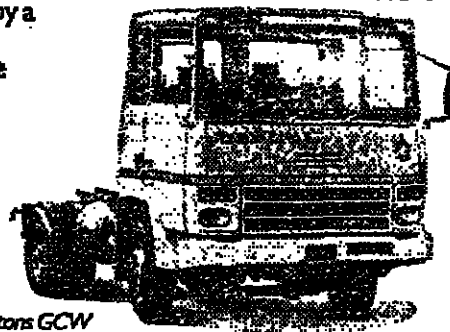
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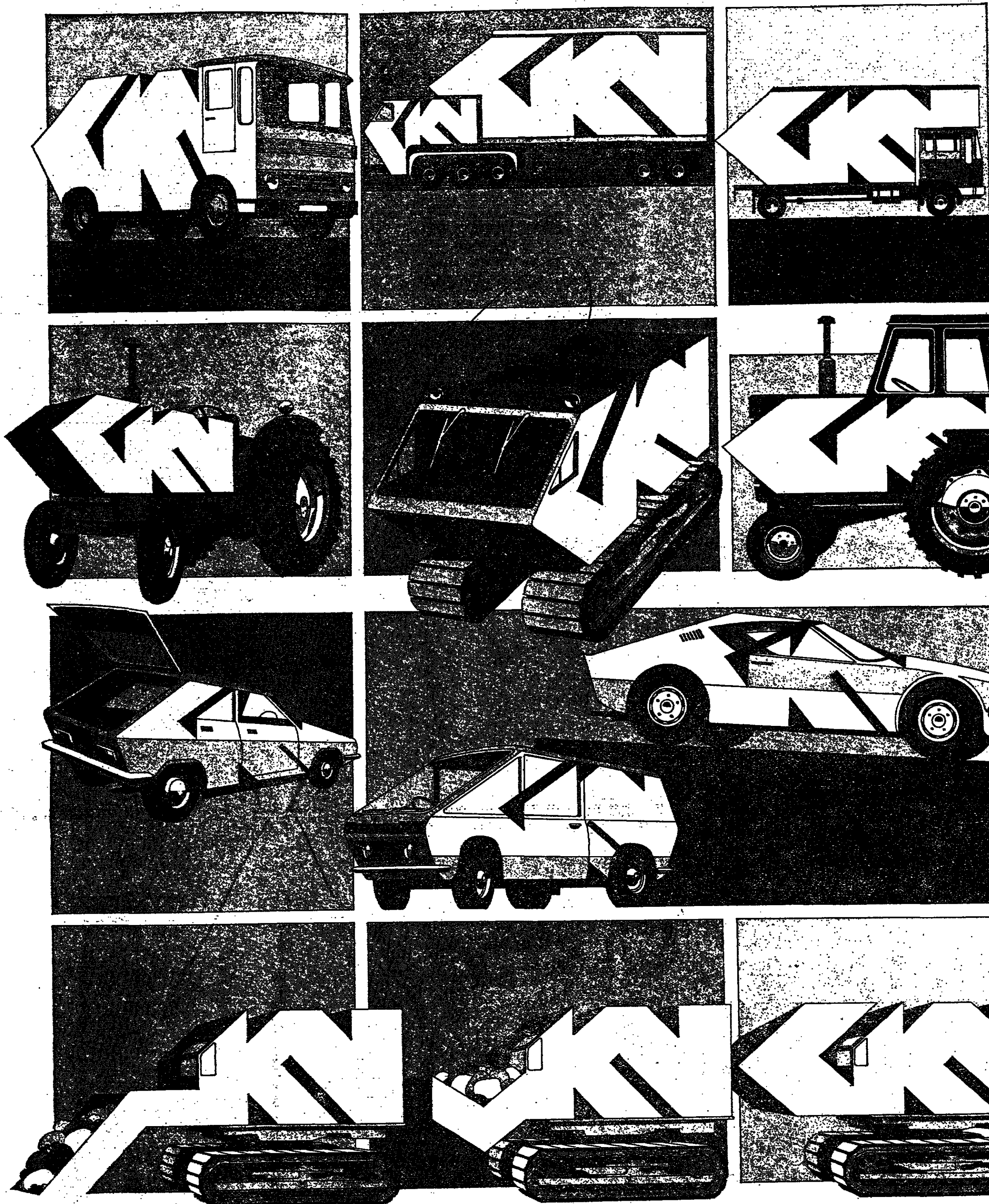
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Bronze, continuous cast bar
Bronze wrought alloys
Bumpers and over-riders
Bushes, non-ferrous
Bushes, oil-retaining
Bushes, dry
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Clutches, diaphragm spring, "Belleville" disc and coil spring
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Control cables
Couplings, universal ("Hooks" type)
Couplings, constant velocity
Couplings, plunging
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Crankshafts, finish machined
Diagnostic equipment, engine and vehicle performance
Differential units
Differentials, limited slip ("Power Lok")
Drive shafts (to road wheels)
Electrical laminations
Extrusions, aluminium
Extrusions (cold extruded in steel)
Extrusions, impact
Fasteners (all types)
Flexible Drives
Forgings - drop, press and upset
Forgings, impact machined
Forgings, powder metal
Forgings, precision
Four wheel drive ("Ferguson Formula")
Garages equipment
Hinges, door
Hoses
Impact extrusions
Joints, constant velocity
Joints, plunging
Joints, universal ("Hooks" type)
Lock nuts
Locks, door
Locks, fuel caps
Locks, ignition
Locks, steering
Maintenance workshop equipment
Nuts, all International standards
Nuts, standard
Nuts, special
Overdrive units
Overdrive units
"Range Change" (double gear ratio range)
Plastic mouldings (radiators, grilles, body interior units, etc.)
Plastic panels, glass fibre reinforced
Powder metallurgy
Power take-off shafts
Power take-off shafts, agricultural
Pressings, from small cover plates to truck and bus side frames
Propeller shafts
Push rods, engine
Range Change overdrive
Road wheels
Rocker arms, engine (pressed steel)
Screws, all International standards
Screws, machine, standard
Screws, machine, special
Screws, self-piercing and tapping
Screws, self-tapping
Screws, wood
Sintered metal components
Spring steel, strip and wire
Starter rings
Steel bars, black and bright drawn
Steel bars, free cutting
Steel strip, hot and cold rolled
Steel - special rolled sections
Steel wire, cold forging quality
Strainers, metal and nylon
Transmission components
Transmission, is steam, "Ferguson Formula"
Washers, bearing thrust
Washers, standard
Washers, special
Wheels, road, light alloy
Wheels, road (for buses, trucks, tractors, dumpers, earthmovers)
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Woodscrews, recess head ("Powerdriv")

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COMMERCIAL VEHICLES IV

Revived interest in battery power

THE RAPID and traumatic increase in fuel oil prices towards the end of 1973 inevitably led to a renewed search for alternative methods of motive power and to a re-examination of forms, principally electricity, which had been previously rejected on cost grounds. This year has seen an enormous amount of new activity in the electric vehicle field both in this country and in Europe—particularly Germany—Japan and the U.S.

The concept of battery vehicles is far from new. The first practical electric carriage was made almost 140 years ago, only a few years after Faraday's discovery of electromagnetic induction. The first commercial passenger-carrying battery-powered vehicle in the world was introduced by the Paris Omnibus Company in 1881, and less than a century later, it was by the end of the last century electrically powered bus fleets were appearing in Berlin, Paris, New York and London. The

world's first taxi cabs were electric while it will come as a surprise to many to know that the world's first land speed record, in 1898, was established by a battery powered vehicle with a breathtaking velocity of 39 m.p.h. Queen Victoria is even said to have looked favourably upon this version of the horseless carriage, which, it was reported was "adopted by the aristocracy of London, Paris and New York." But the simple fact was that

the invention of the internal combustion engine, with its far superior performance and more economical running costs, drove the battery powered vehicle as a form of open road transport into the science museum. There are still few signs that it is going to make any large scale break out. This is not to say that there is no scope for the electric vehicle. Indeed, there are, at this moment, in the region of 45,000 battery powered electric vehicles on the roads of Britain, most of them milk floats, while the pollution free qualities of the electric engine have made it a must for internal factory use, where the fork lift truck is in fact helped by the weight of the lead acid battery.

has still to make the significant breakthrough. To fully understand the superiority of the internal combustion engine it is necessary to understand the shortcomings of the battery power, which is, to all intents and purposes, lead/acid power. The prevailing difficulties relate to weight, performance, range and time necessary to recharge. For example, the batteries used in the electric bus system now operating in Munchengladbach and Dusseldorf, which are lead/acid with advanced design features relating to cooling and automatic refilling, weigh 6 tons for each single decker. In terms of performance, the relatively high speed and acceleration necessary for road use can only be bought at the expense of a much higher rate of battery rundown and the necessity of more frequent recharging and greater "downtime." Again, range is highly limited, with reported figures of 100 miles for certain vehicles obtained only as a result of single-speed driving with no stopping and starting. In town driving, range is cut down sharply. When it comes to recharging, a full recharge can take up to eight hours, which represents a further sharp restriction on flexibility of use.

Pace

Oil crisis notwithstanding, however, the fact remains that battery vehicles are still nowhere near competing with petrol and diesel cars, trucks and buses. Perhaps the most surprising fact in a world which has become blasé about the pace of scientific innovation is that there has been only minimal advance in battery traction over the past hundred years or so. Now, as then, the lead acid battery remains the most viable form of motive power, and although there are widespread experiments going on with high temperature batteries, principally sodium sulphur, and with other alternatives such as metal/air, the battery industry

available for recharging and sophisticated automatic charging stations which can replace a battery in a matter of minutes and enable a bus to run a full operation this has been felt to be one of the least suitable areas for electric conversion, although the Electricity Council is currently testing a number of Enfield 8000 electric cars.

Buses on the other hand, where routes are precisely known in advance have been considered much more suitable and a large number of experiments have been undertaken in the last couple of years. The problem remains however that although routes may be known, that still does not solve the range problem. Electric buses cannot simply be turned round at the terminus.

One solution to this problem is to replace "used" batteries with new ones and then recharge them away from the vehicle, although here the size and weight of batteries presents handling problems. This has been the method adopted by the GES consortium in Germany which has developed

fixed batteries, the question of lengthy downtime remains. When it comes to commercial vehicles, long distance haulage is out of the question due to range limitations and the positively daunting size of the battery needed to power a 32 tonne lorry. Short distance urban carriage is considered more viable and there is a good deal of work going on at the moment in the one-ton payload range by companies such as Lucas in the U.K. and Volkswagen in Germany.

Another alternative which has been looked at, for example by Volkswagen, is the "hybrid" vehicle which is petrol/battery powered. However, the fact that Volkswagen's hybrid van is on the way to the Guggenheim Museum in New York is perhaps a fitting comment on its commercial viability. For the future, electric vehicles only appear to be a viable proposition where environmental considerations outweigh commercial disadvantages, although a scientific breakthrough could tip the balance.

Peter Foster



The Lucas electric bus in operation in Manchester.

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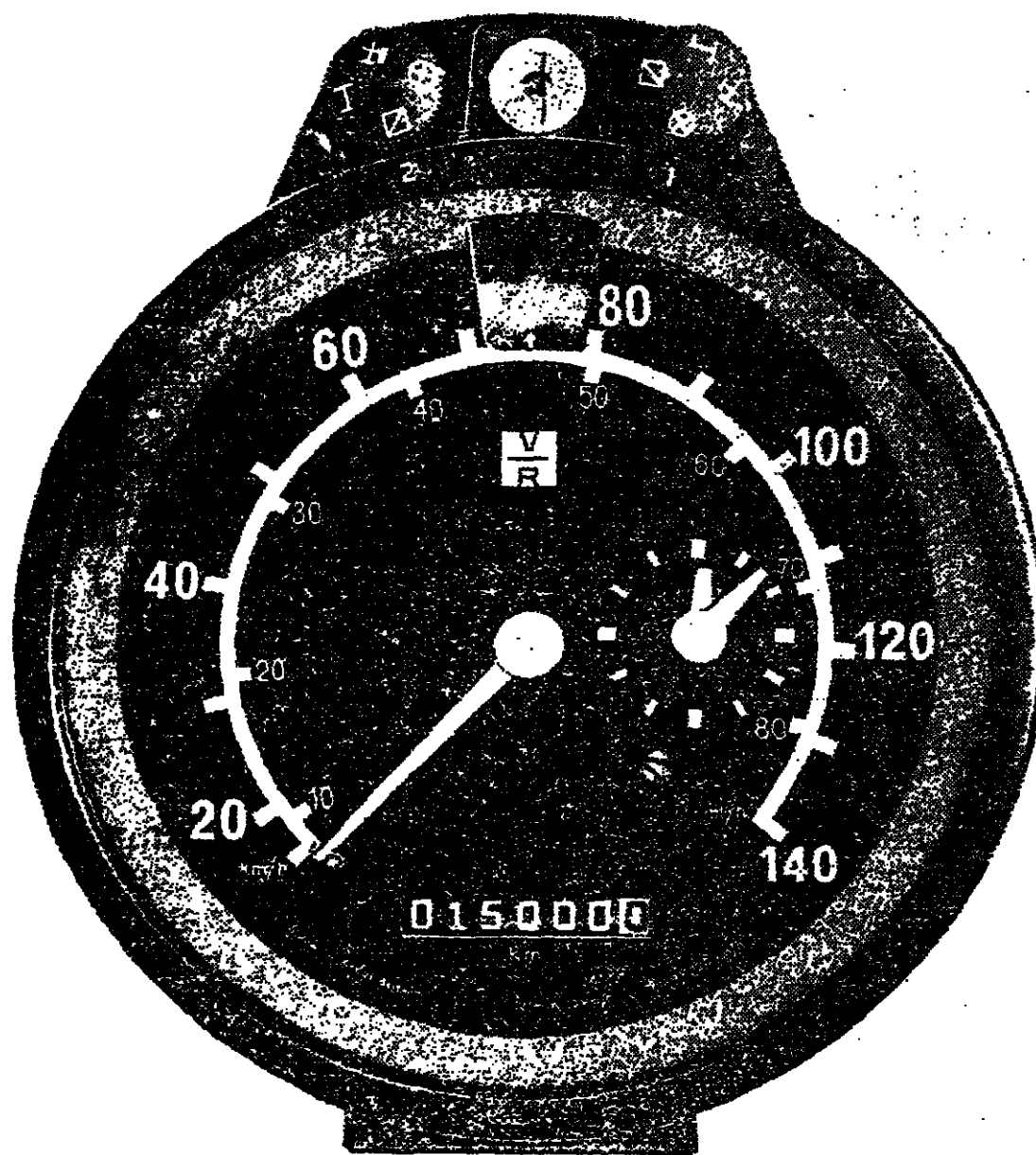
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A specialised vehicle from Scammell.

A steady market for specialists

ONE OF the most intriguing sectors of the commercial motors industry is the manufacture of specialised heavy vehicles—the haulage machines that transport tanks and massive loads across deserts and rough terrain.

Scammell, the Watford-based company which has managed to maintain its identity within the British Leyland empire, can claim 50 years' experience in making "one-off" vehicles. Though the company has a range of basic vehicle types, any one of these can be redesigned to meet the needs of an individual customer. The company's design team can call upon the components and resources to equip a vehicle to serve virtually any transportation demand.

Scammell says that nearly the whole of its £4m. a year turnover is for export, principally to the Middle East, Africa, and the Third World countries where heavy vehicles are needed for development programmes. With such a market, competition is truly international.

Downturn

While the downturn in the world economy has certainly slowed down demand, the range of uses to which specialised vehicles can be put is so wide that manufacturers have not been unduly hit. Vehicles are usually supplied at a negotiated price and in times of economic uncertainty such negotiations may become more protracted.

Scammell, as one of the best known names in the world market provides a good example of the sort of qualities required for specialist vehicles. The "Contractor" heavy-duty vehicle used with a Crane Fruehauf semi-trailer can haul military tanks, weighing up to 60 tons, at speeds of up to 46 miles an hour, over a 300-mile range. Scammell reports that the model has been supplied to governments throughout the world and operates reliably in conditions ranging from Arctic to sub-tropical.

A modern transporter must allow the fast deployment of

armour without wear and tear on the tank or undue stress upon the crew. Equipment must also be provided to enable captured or broken-down vehicles to be moved quickly and easily to safety.

To demonstrate the flexibility of its Contractor, Scammell maintains that it can provide for the fast movement over differing terrain of armour such as the Chieftain, Russian T55, T62, and French AMX 30 tanks. The vehicle has a turbo-charged 335 bhp diesel engine which enables it to operate efficiently at altitudes of up to 12,000 feet without loss of power. An integral engine brake is a valuable help in times of emergency. The gearbox has 10 normal and five deep reduction gears; all the ratios can be changed to suit the transporter to hilly or flat terrain.

So that the vehicle can cope with tropical operations, its engine is cooled to handle temperatures of up to 125 degrees F (52 degrees C). To aid the driver, the cab has a sun canopy and can be fitted with air-conditioning equipment.

Crucial to the operation of such specialist vehicles is careful attention to a design which will allow maximum stability and evenly distributed weight even over the roughest landscape.

The Contractor has a specially designed winch for military operations. Between 107 and 122 metres of 25 mm. rope can be carried on the vertically mounted drum, which has a particularly large diameter to reduce the bending stress on the rope. For tank recovery, special safety features have been built-in—a winch brake cut-out, for example, to prevent any run-back should the engine stall.

Top quality winching equipment is also a feature of another Scammell model, the "Super Contractor" wrecker/recovery vehicle. This basic chassis, first introduced in 1960, is designed to cope with transporting extra heavy loads across rugged terrain, and desert areas.

The wrecker/recovery vehicle, which as the name suggests can be used for recovering heavy plant or machinery from captured or broken-down inaccessible places, can tow loads of around 100 tons.

The special recovery equipment, designed by Reynolds Broughton, includes a 20 ton crane which can provide an additional function as a mobile crane for use at base workshops. The vehicle has a bare drum line pull capacity of 25 tons, and a continuous line pull of 20 tons along the entire 150 metre rope length. Jacks come into force to stabilise the vehicle while the crane is in operation and a massive spade holds the Contractor during winching.

Rough

The sturdiness of such specialist machinery can be appreciated when it is realised that the chassis frame of the base Contractor has boxed side-members of half inch steel plate.

Scammell says that several European governments between them have ordered "many hundred" chassis and draws attention to the vehicle's adaptability to rough ground.

For maximum articulation the Contractor is suspended on a three-point mounting system, comprising pivots for front axle and each balance beam of the rear tandem bogie. Continuous drive to the six driven wheels is ensured and the 275 bhp Rolls-Royce engine is prevented from overspeeding by a special electronic device built into the gearbox.

Very high specifications and quality engineering are obviously necessary attributes for success in the manufacture of special purpose heavy vehicles. Within British Leyland, Scammell, with some 950 employees, provides a good example of a company trading profitably and pressing ahead to record valuable achievements in export markets.

Arthur Smith

Good export record

UCK EXPORTS have played a highly significant and frequently unrecognised role in the development of the British motor industry. Largely because in war time priority was placed on commercial vehicle development over cars, the U.K. emerged in the late 1940s with a much stronger truck than car industry. Later, the powerful commercial vehicle industry succeeded in proving the primary force in the series of mergers which created the present pattern of companies, for Leyland Motors, the most successful of the truck concerns, became the chosen vehicle for the rationalisation of the non-American-owned car industry.

Leyland, in its heyday in the early 1960s under Lord Stokes, was a spectacularly successful exporter, winning big contracts all over the world, from its renowned bus deal in Cuba to the

lorry assembly business in Israel which has subsequently been such a source of aggravation to British Leyland since it caused the company to be placed on the Arab boycott. Mercedes, Germany's most consistently effective motor concern of the last decade, is another example of a company which has risen on the back of truck sales, including a highly successful export business.

One reason for the seemingly untroubled growth of companies like these, and their apparently much more stable record than comparable car manufacturers, is the basic nature of the business. As a product, lorries are much closer to the capital goods industry than cars, which are effectively treated as consumer durables with all that implies in terms of price competition and fashion influences.

Prices are not such a key element in the truck industry: what matters, in a product worth between £5,000 and £15,000, is not the odd £100, but the quality of service and sales back-up, and personal relationships between the salesman and customer. At the same time, customers are more prepared to accept the need for the manufacturer to make a reasonable margin on the sale, unlike the average motorist.

Of all the large European commercial vehicle manufacturing nations, Britain has for many years been the primary producer. In 1973, for example, the U.K. produced 417,000 vehicles to France's 394,000, Germany's 299,000, and Italy's 135,000. This weight of production is partly due to the

emphasis placed on road, as opposed to rail, transportation for freight, a far higher proportion of goods being carried by truck in the U.K. than in Germany, for example, because of the deliberate Government efforts on the Continent to keep freight on the railways.

At the same time the U.K. industry has been highly export orientated, with strong links throughout the Commonwealth and the third world. Part of the reason for this was the swifter development of the American-controlled concerns tended to concentrate their CV production in the U.K. rather than Germany, where the main thrust of their car investment went.

Hence General Motors has built up the Bedford business in the U.K., while Opel has no

CV production: in the recent reorganisation of GM's European interests Opel, rather than Vauxhall, took on the main responsibility for car engineering and development, while CV development remains unquestionably in the U.K. Chrysler has also concentrated a large slice of its European truck investment in the U.K.

Of the three multi-nationals, however, Ford has proved the most pervasive influence in commercial vehicles. Again it has chosen to keep almost all its CV production in the U.K., although the assembly of its new heavy Transcontinental truck—an important contract—has gone to its Amsterdam plant. In Britain, Ford has built up its dominant position in the manufacture of light and car-derived vans, and apart from the Transcontinental has developed to a point where it makes the whole range of vehicles.

The key question now for the future of exports will be the way in which the U.K.-based companies tackle the EEC market as tariffs come down. The major market for Britain has traditionally been the Commonwealth: with total exports running at about 38 per cent of production, the Commonwealth takes almost half, and the EEC as little as 10 per cent. This balance of trade is expected to change greatly in favour of the EEC, and indeed needs to, if Britain is to balance the increasing penetration of its own market by EEC products.

Much of the burden of improving Britain's position in the EEC will fall on BL's truck and bus division, the third largest



The British Leyland Super Constructor 50-ton-capacity off-road exploration vehicle in service with a Finnish firm.

producer in Europe of trucks has been its flexible approach over 31 tons GVW. The Ryder report on BL set an ambitious target for the truck and bus division, which suggests that it can increase its penetration of the Western European market from 1 per cent to-day, to 5 per cent, by 1982.

For the U.S.-controlled companies there may be some conflict of interest in developing these markets: in Saudi Arabia, for instance, it is the U.S. parent company, rather than General Motors' Bedford subsidiary, which has recently signed an important contract to build a plant.

In heavy trucks, indeed, where the American companies have always had a good exporting record, competition from across the Atlantic is increasingly building up, especially in rapidly developing markets like Iran. Mack Trucks, for example, has established a major presence in the Middle East. At the same time, British companies face increasing pressure from the Japanese commercial vehicle

producers in the lower weight ranges: Japanese pick-ups have been an immense success throughout the Middle East—replacing the camel, it is said, for the nomads—and, to take another example, the Toyota Landcruiser has proved a major rival to the Land Rover throughout the world.

At the same time both Mercedes and Fiat are continuing to step up their overseas efforts. Mercedes from a strong historical position in exports, and Fiat from a base of good contacts throughout North Africa. In Iran, Mercedes is currently the largest producer of trucks and buses, followed by British Leyland. BL itself is making a big push into Africa.

Although at the moment the world truck market is suffering from the recession, there are better hopes for swift recovery in sales than for cars. In particular the capacity problems which will plague the European car industry for the next few years are missing; there remain major opportunities for a healthy export trade.

Terry Dodsworth

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Vans and light trucks

UNTIL the large increase in production capacity for European heavy trucks began to come on the market about 12 months ago, the most competitive sector of the commercial vehicle industry was undoubtedly in the lighter vans and trucks. Almost all the European car manufacturers—Ford, Vauxhall and British Leyland in the U.K., Mercedes and Volkswagen in Germany, Fiat in Italy and Renault and Simca in France—were well entrenched in the business. At the same time they were fighting the marketing battle on a highly priced competitive basis.

The major investment switch to heavier vehicles has inevitably distracted attention from the lighter ranges, and lifted the most intense competition to the top of the market. At the same time sales of smaller vehicles have held up better this year than expected. For example, in the U.K., registrations of vehicles under 6 tons have declined by rather less than 10 per cent, against a 15 per cent drop in sales of heavy trucks of over 24 tons gross vehicle weight, and a marked slip in sales of construction vehicles.

Within Europe, Britain has a major opportunity for exports in the light and medium-weight truck sector. In the medium-weight range of trade distributive vehicles, the Ford Transit, made both in Britain and Belgium, has established itself throughout Europe as a tough competitor, winning sales strongly in both Italy and France as well as Ford's native territories of U.K. and Germany. The Bedford CF and the British Leyland Sherpa have also proved competitive vehicles, with the Sherpa beginning to win back sales against the lighter Transit in Britain partly because of its ease of servicing and well-tried components.

New challengers, however, are continuing to emerge in this field. The Japanese, for example, have made huge strides in the last decade, with products ranging from a variety of pick-ups, to the Toyota Landcruiser, which compete with the Land Rover in many markets, to light vans which, in the Toyota range, are beginning to establish themselves in the U.K. Japan easily outstrips any European nation to-day in its total commercial vehicle manufacturing resources.

In export markets this has given the Japanese companies considerable muscle. For example, in both the U.S. and the Middle East Japanese pick-ups, a vehicle configuration now out of favour in Europe, have carved out a strong position. In the U.S. pick-ups are often used as second or third vehicles, while in the hot Middle Eastern climate, where weather protection is less important, they are used as beasts of burden. In Australia and New Zealand, and throughout the Far East, the Japanese companies also have a strong grip on the market. Europe, however, remains relatively self-sufficient in commercial vehicles, and in the light van sector has spawned a

variety of contestants over the last few months. Among these is the Leyland Sherpa, and front-wheel drive vehicles from both Fiat and Citroen, which had worked on a joint development before breaking off their partnership.

With Mercedes already well established in this field since its takeover of Henschel-Hanomag (whose vehicles were substantially redesigned by Mercedes), the customer is now offered a wide variety of choice. The strength of the British companies in this competitive situation is their price, since it was the British-based designers, influenced by American thinking on value engineering, who first grasped the idea that these vehicles could be made to less exacting standards than is common in the industry, since the kind of loads they carried, and the work they were put through, was less demanding than for heavier trucks.

Loading

Like the light vans, light and medium-weight trucks come in for a variety of uses. In general their work is concentrated in the distributive trade, which may mean a pattern of long or short trips, and certainly implies a variety of loading weights, unlike the business generally contracted in the heavy weight ranges. Once again, the value engineering strategy applied by both Ford and Bedford to this business have given them considerable strength in the market place, but it remains an attractive area for most manufacturers because the distributive trades tend to swing less violently in response to economic depression.

Hence Volkswagen, for instance, is this year coming into this market with its LT truck, a new vehicle which uses a Perkins diesel engine as well as a petrol version, and which is designed to compete with the Ford Transit and Bedford CF. The company is aiming to sell some 4,000 of these in the U.K. in its first year—an ambitious target given the problems most EEC manufacturers have found in meeting the price competitiveness of British manufacturers.

The medium-weight truck sector, covering vehicles from 6 to 16 tons gvwt, has also led to one of the most unusual and radical adventures in European truck manufacturing in recent times. This is the so-called "Club of Four" programme, linking Volvo in Sweden, DAF in Holland, Saviem in France and KHD in Germany.

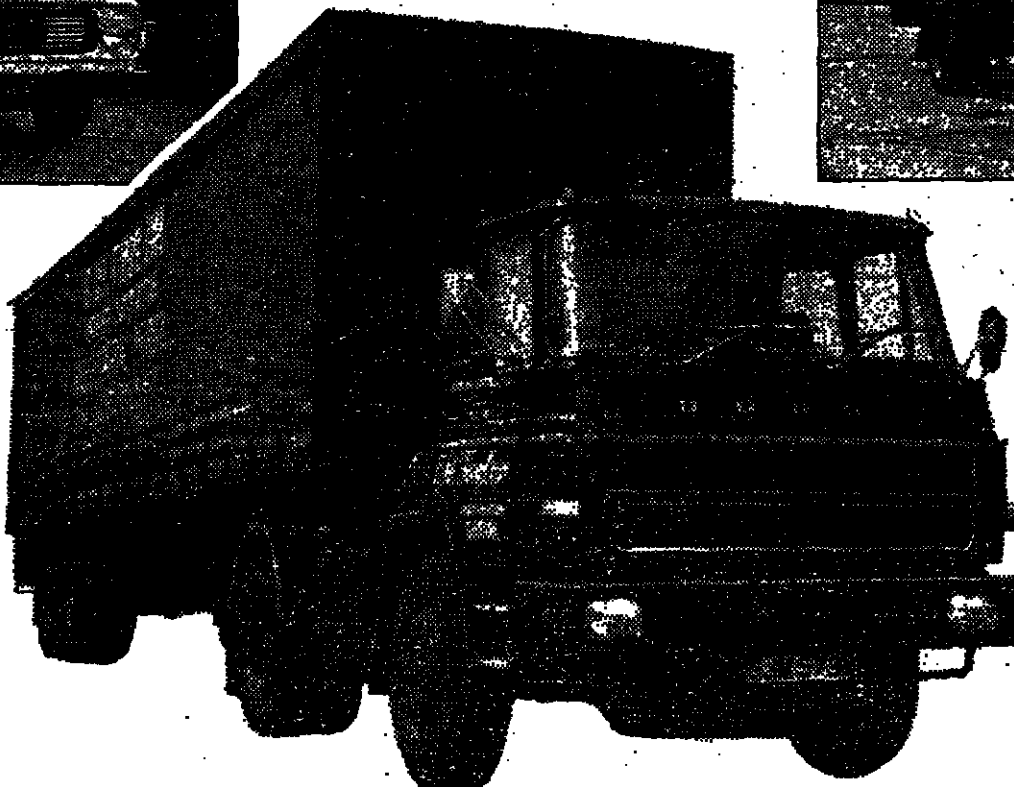
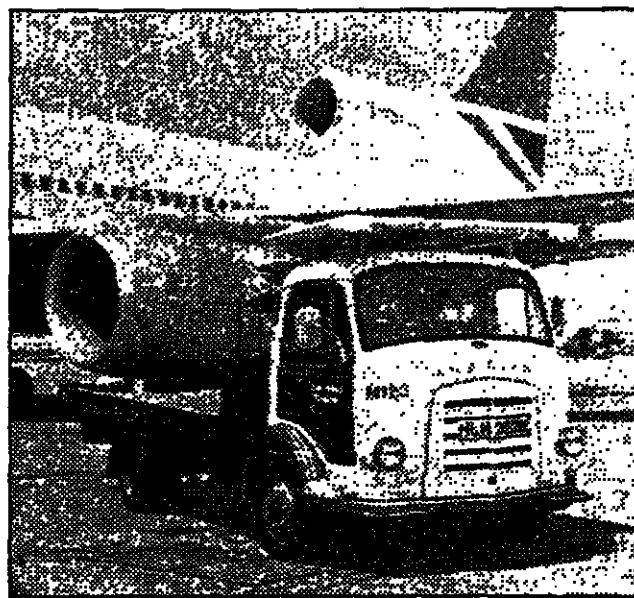
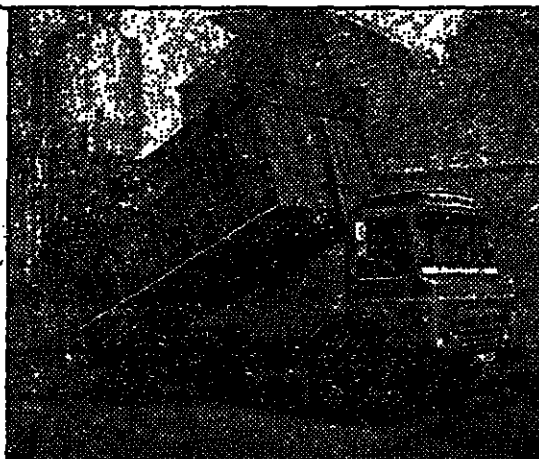
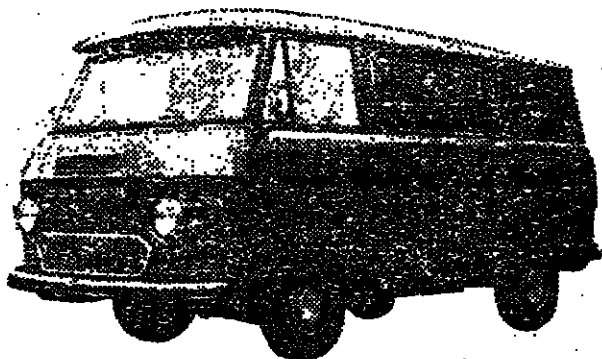
The link was forged in response to the increasing integration and size of the major European manufacturers, notably Mercedes, Fiat and the big British manufacturers, who were able to straddle the whole market with their products. The Club concerns set up a joint company, registered in both Paris and Amsterdam, to design and develop a common vehicle for assembly at their own plants at Eindhoven, Ulm, Blaiville and Ghent. Purchasing and engineering is done separately, while production and marketing are the responsibility of the individual companies.

In some respects, substantial savings can be made on such a vehicle programme, partly by splitting development costs between four companies, and also by standardising on components:ZF gearboxes, for example are universally used, and each has a French-made cab (assembled by the individual manufacturers). The basic difference is in the engines, with each company free to develop its own.

Whether such projects can be repeated remains to be seen. Although many truck company executives believe that the only hope of survival for smaller producers is to become involved in such joint ventures. The fact is that a wide variety of choice has been made available to the

customer in Europe as trade barriers came down, and while this may be expanded still further by imports, it is difficult to see the scope for the number of companies now supplying the market.

Terry Dodsworth



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COMMERCIAL VEHICLES VI

Diesel sales a growth area

THE ONE unquestioned growth area in the world motor industry this year has been in diesel engine production. While this has affected the car industry—Peugeot of France, for example, stepped up output of its diesels by 30 per cent. last year to produce more than 100,000 diesel cars—the greatest impact of the development has been in light commercial vehicles. In this sector of the industry the diesel's disadvantages—weight, noisiness and lack of performance—are less important than its advantages in terms of fuel economy and low running costs.

Costs have proved the dominant factor of diesel usage over the years. For example, in America all goods vehicles, including the very heavy trucks, have tended to use petrol engines because there was little point, on cost grounds, in transferring to diesels. In Britain and

Europe, virtually all heavy goods vehicles over 10 tons use diesel engines: since these trucks are bought to last for a long period—unlike the average car—small van which usually changes hands after two years—the extra capital cost of the dearer diesel engine is more than offset by the reduced running costs.

In the U.K. diesel engine production has been fragmented between several manufacturers. In contrast to the general European practice—followed unwaveringly by Mercedes and Fiat—of in-house production. Some of the companies within what is now the British Leyland truck and bus division, have always been active producers—for example, AEC and Leyland Motors—but even they tended to offer alternative "proprietary" engines bought from outside suppliers. Many customers in what used to be an extremely parochial market

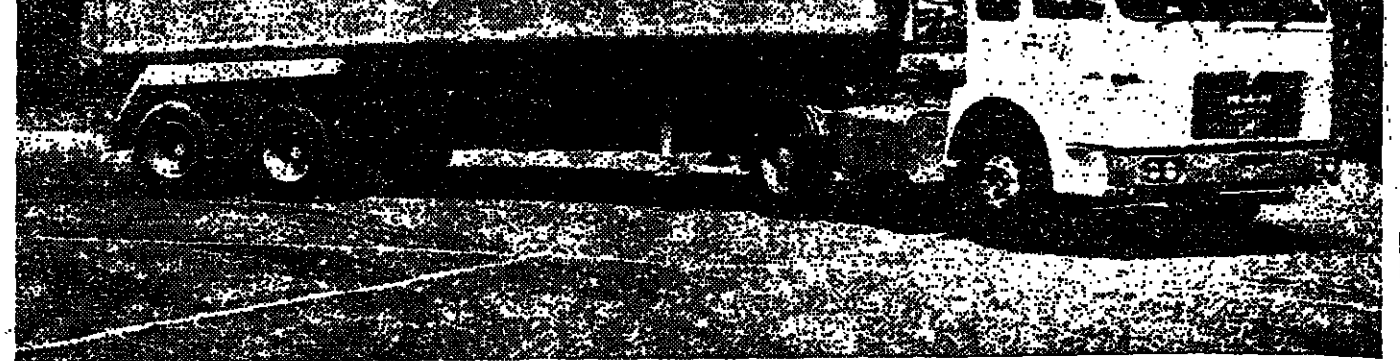
Variety

Because of this historical development the situation today is that there is still a large—and vigorous—variety of diesel engine manufacturers outside the major truck companies, chief among them being Cummins (U.S.-controlled), Gardner and Rolls-Royce, British Leyland and U.S.-major producer, but companies like Foden's, ERF and Seddon Atkinson offer a wide range of proprietary engines.

Growth in this sector has been inevitably inhibited this year by the downturn in the market, although Cummins, for example, has won the important

contract to supply engines for the new Ford Transcontinental range, and Gardner has over the years followed an extremely cautious policy in estimating demand. However, in the light of the last 12 months have seen an explosive expansion of demand, as operators in both home and export markets have sought to convert their fleets to diesel fuel as quickly as possible.

The main beneficiary of this trend in the U.K. apart from the diesel component suppliers such as CAV, is Perkins, the Peterborough-based and U.S.-controlled company which has an established strength at the lighter end of the market. Perkins has a healthy and growing export market, has tied up a manufacturing deal with Hyundai, the new South Korean motor company, which is planning to produce its first car later this year and will then expand into commercial vehicles.



The M.A.N. 43.3-ton diesel.

to supply Volkswagen with the engine for its new LT truck. VW's first light commercial. The Peterborough company has also recently tied up a deal with Hyundai, the new South Korean motor company, which is planning to produce its first car later this year and will then expand into commercial vehicles.

Demand for diesel engines to power the smaller commercial vehicles is reckoned to have increased this year by about 15 per cent. on a world-wide basis. Both of Britain's major light diesel manufacturers, Perkins and Ford, claim that they are finding it hard to keep pace with demand, and both are increasing their investment in this range of engines.

Perkins is investing some £10m. in new plant and development this year, having spent a similar sum last year, and Ford is planning to increase investment in its York engine which is fitted to both the Transit and the A series of light trucks. Since Ford began making its own diesels four years ago—previously it had used Perkins engines—their use

in the Transit range has gone up from 10 to 25 per cent. The buying patterns for both Bedford and Commer light vans bear out the evidence of Ford, since sales of diesel-powered vehicles have held more than steady against a decline in petrol-engined versions.

Elsewhere in Europe, diesels tend to have a tighter grip on the lower weight ranges of trucks. This is particularly so in Germany, where Mercedes—using the same engine for its light vans as the 240 saloon car—has a strong grip on this sector of the market. In France both Peugeot and Saviem produce diesels, and in Italy Alfa Romeo offers another range.

The present trend towards the diesel engine in Britain is now beginning to develop all the signs of permanency, with diesel sales rising steadily against a generally declining market. If the trend continues there is a strong possibility that diesel manufacturers could capture at least half of new U.K. registrations in this sector by 1978. This would compare with only a 30 per cent. share

in commercial vehicles below 6 tons gross vehicle weight at present.

In the heavier-weight ranges the big question hanging over the market at present concerns vehicle weight legislation. Europe still tolerates a variety of upper sizes of trucks on its roads, but in due course the EEC will lay down regulations on maximum weights and axle loadings. The decisions on whether to develop more and more powerful engines—several manufacturers, for example, Fiat, are experimenting with turbochargers—will to some extent depend on the approach the EEC adopts.

Pollution

In recent years most engine development has been closely tied to legislation—much to the annoyance, at times, of the manufacturers. But governments, concerned to reduce noise and pollution, have applied considerable pressure on this aspect of engine development. Many of the truck industry's engineers now claim that this development has

gone far enough, and that it is pointless to try to reduce noise levels further since the noise produced by engines is no greater now than that created by tyres.

Hence more of the emphasis is on engine development over the next few years may well be in terms of efficiency. It is not clear as yet what influence that will have on the policy differences between those manufacturers who make all their engines and transmissions in-house and those who provide a number of options by buying from outside suppliers.

But it is significant that Ford, having thought hard about making all its major components for its new range, decided to go the proprietary route, and that even Fiat, one of the most vertically integrated truck companies in Europe, is taking advice on turbocharging from a British engine company, and has declared an interest in expanding its component buying network.

Terry Dodsworth



The Volkswagen LT light van.

Steady progress towards common standards

OVER THE last few years new legislation has assumed an importance in the commercial vehicle industry. The reasons are not hard to find. Public concern over the environmental consequences of vehicle noise and engine pollution have been one major factor. Equally, governments have been forced to adopt a cautious attitude to the pressure for increasing truck weights, both for safety reasons and the opposition that has developed towards the juggernaut. Thirdly, the whole of the European industry is now being enmeshed within a widening framework of legislation as the EEC sets about establishing common standards for both vehicles and haulage operations.

The work on environmental regulations has taken place mainly on engines and cab design. The effort to reduce noise has made a significant improvement to the new range of vehicles which are now coming on stream, although most engineers believe they are now approaching a point where further development is negated by road noises. At the same time there is an understandable desire among engine designers at the moment to get back to work on developing power and efficiency, having put a major part of the research effort over the last few years into Government-inspired projects.

At the same time, standards of cab design have advanced out of all recognition over the last few years. There are two sides to the question of improving cabs, the reduction of noise inside it, which benefits the driver, and the reduction of street level noise to the benefit of the general public.

Exacting

Although the standards set by legislation are regarded as fairly exacting by the industry, external noise levels, particularly when engines are under pressure or vehicles are travelling at speed, still leave a lot of scope for improvement. Whether the problem can be overcome, at a reasonably economical cost, is a moot point: many industry executives argue that the public has to bear some price for the benefits conferred by the expanding haulage industry.

The improved interiors of cabs, however, have undoubtedly given drivers a much more acceptable environment over the last few years. Seats are more comfortable, power steering the rule in larger size trucks, the ride has been made

much smoother and extensive padding has eliminated the harsher noises so that an average modern truck can be driven without the driver being aware of much more noise than in a modern car. At the same time, heating and ventilating systems and radios are universal. The construction of cabs, particularly cab roofs, has also been strengthened to give greater protection in accidents—lorry drivers are particularly vulnerable to loads pushing forward from the rear to slide over and crush the cab.

The issue of increased weights is particularly important to manufacturers working on new model lines. The U.K.'s hesitancy to increase vehicle size in the 1960s, for instance, is one of the reasons why Continental manufacturers managed to achieve such a strong lead in the field; it also partly accounts for the shortage of heavy vehicles when the legislation to go up to 32 tons was finally introduced, and the opportunity that gave to the importers to walk in and grab a large part of the U.K. market.

In spite of all the hitches, EEC legislation and regulations are steadily standardising the European industry: for example, the Community closely regulates vehicle travel across frontiers, allocating national rights on a quota basis. As this kind of control expands, the European com-

panies are being pushed into a situation where manufacturing differences become proportionately less important to the customer than marketing, service and back-up facilities. This is the classic situation for encouraging mergers and rationalisation, and one important effect of EEC legislation may eventually be to create a much more streamlined industry.

At the same time, as trucks become heavier and larger, the pressure to keep them away from major population centres and from congested car routes will build up. So far, the idea of truck routes—like bus-only routes—has not met with much success, but there is still a strong lobby in favour of such a policy. Much depends on the growth of distribution systems: but if the predictions of the escalating demand for moving goods about Europe turn out to be correct, and if the major burden of that falls upon the road system, it is difficult to see how Governments can avoid introducing further regulations.

Terry Dodsworth



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مكتبة الادب

COMMERCIAL VEHICLES VII

Trailer controversy continues

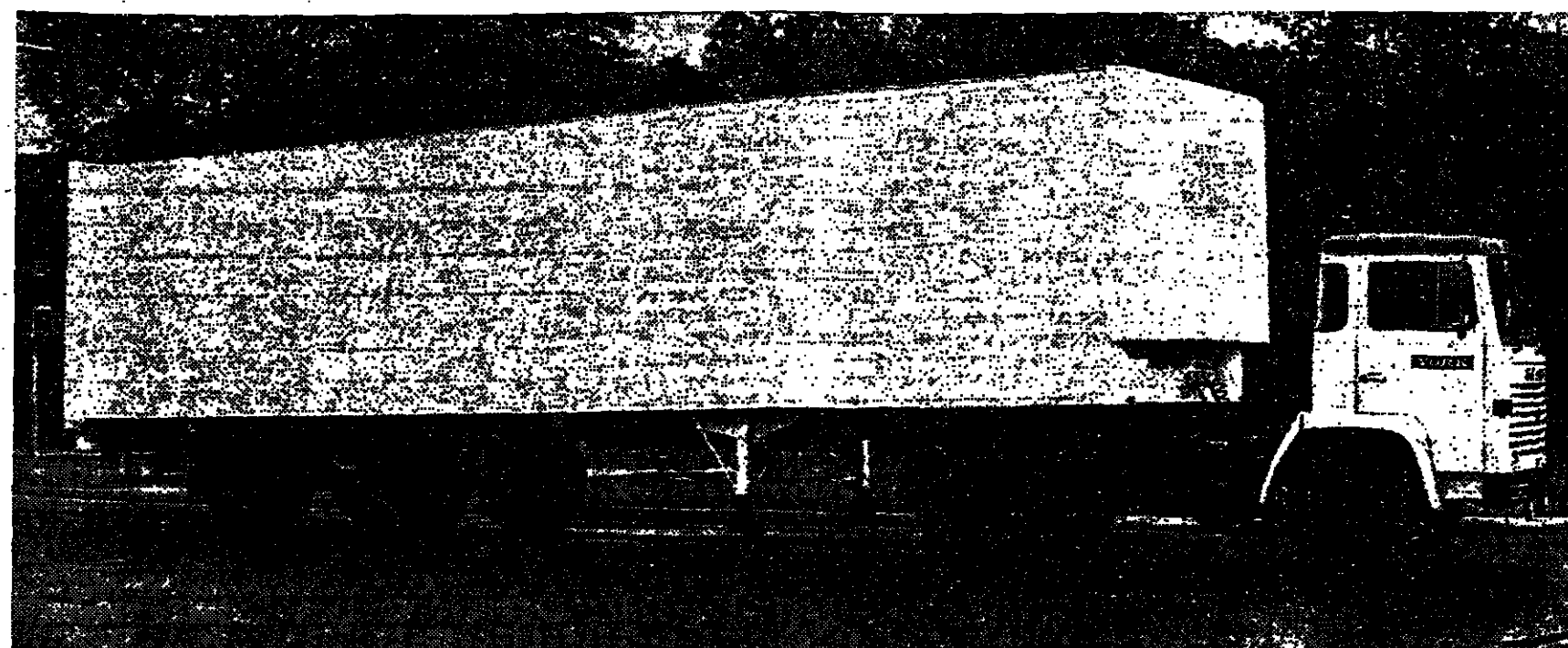
THE PROBLEMS of the trailer of years have been worsened by the successful onslaught of European producers precisely the difficulties of the on the British market. For the road haulage industry as a trailer manufacturers' like whole. However, there have been a number of factors which have aggravated the myriads of smaller specialist the downturn. For the future, concerns difficulties have been soured-searching over whether aggravated both my historical investment is worthwhile and technical factors, while the because of threats of national successful marketing of a sation and general economic number of foreign trailers here prospects has been made more for the first time is considered problematic by uncertainty over ominous by many who pre-vehicle weight legislation. viously considered the U.K. market a strictly domestic

As far as the trailer industry is concerned, the biggest boost is which it can hope for is Parli-mentary approval for an in-crease in gross vehicle weights of trailers than tractors when to 38 tonnes. Such legislation there is a call for pruning would stimulate business at the budgets because risks of break-four and five axle articulated down and costly "downtime" and "road train" end of the are much less. Trailers are business. This issue of maxi-mum weights has proved a so there is less that can go major stumbling block to trans-acting with them. When some-thing does go wrong it is also usually much easier to repair. This means that patching up road haulage, the array of dif-ferent weight, construction and sition than keeping on tractors, load distribution specifications where repair costs begin to in the various Continental mount alarmingly after a few years' hard use.

The chain of events which leads to a cutback in investment during a downturn in the economy is the same in road haulage as in any other in-dustry—a drop in business forces a cutback in operations involving making workers re-dundant, shelving capital ex-pansion plans and cutting replacement expenditure to the bone. This has been seen all too clearly in the experience of the tractor manufacturers, whose problems over the last couple

Impulse

The other side of the coin is that the trailer unit is far less expensive than the tractor, so in some cases, the haulier may buy "on impulse". In historical terms, the down-turn has been all the more severe for following ten years of almost uninterrupted growth. The period since 1964 has been one of expansion in the wake of increased vehicle weights and lengths and the ever-growing importance of the articulated



A York trailer.

lorry. Trailer output peaked at around 20,000 heavy units in 1973, while last year saw a drop to some 19,000, although this figure did not fully reflect the decline in demand and there was a marked increase in stock levels. Earlier in the year it was projected that production this year would stabilise at around last year's level, but these estimates now appear to be optimistic.

The main cause of this decline has been the fall off in demand for the ordinary flat-back trailer, which has always provided the bread and butter business of the U.K. trailer industry. Crane Fruehauf, for

example, the largest of the British manufacturers, was forced to prune its workforce on the flatback side and its experi-ence was typical of other manu-facturers. The situation with trailer vans and TIR units has not been as bad, with the latter receiving a counter-cyclical boost from the increase in haulage activity with Europe, the Middle East and Africa. In addition, the export market has been showing some healthy signs, with the leading manu-facturers and a number of smaller specialists all increas-ing the amount of their over-seas business.

York now sends more than 25 per cent of its output over-seas; Crane Fruehauf exported as much, in value terms, in the first quarter of this year as in year to around £4m. Around the whole of 1974, while Cravens is building up business now go to the key growth areas of Africa and the Middle East, Eastern countries. M and G sent around 20 per cent of its output last year to Europe and Africa. In all, York has doubled its export business over the last four years.

Crane Fruehauf landed two large contracts at the beginning of this year. The first was with Hungarocamion, the Hungarian state transport organisation, which ordered 100 refrigerated trailers while the other, obtained from Seaman

Taskers Trailers, which together hold some 15 per cent of the U.K. trailer market, have recently won trailer contracts from Iraq, Abu Dhabi and the Lebanon, while the company also points out that a number of orders won from British com-panies will ultimately be shipped to the Middle East. J and J Dyson's trailer sub-sidiary M and G last year sent getting on for 300 units to Denmark, Holland, Switzerland, Australia, Libya, Kenya and Nigeria.

The U.K. rate of inflation, which continues to run at twice the level of most of our trading

partners, remains a constant threat to export business. Although the impact is alleviated to a degree by the down-ward float of sterling, the fall in the value of the pound also serves to fuel the inflation further by boosting the cost of imported raw materials.

The economic problems of the last couple of years have led to a thoroughgoing reappraisal of the means of financing trailer sales. Until the end of 1973 and the beginning of the fuel crisis, around a third of trailer sales were financed through "traditional" bank and finance house sources. This figure incorporated sales to rental companies, so sales to "straight" haulage businesses probably did not account for much more than a fifth of total business.

However, the cash flow problems of the last couple of years have led to a much greater proportion of external finance as well as rapid growth in areas such as tax leasing.

Leasing's advantages have been dramatically emphasised over the last eighteen months, as the cost of new trailers has escalated. In addition, other schemes, such as rental-with-option-to-purchase, have proliferated in an attempt to get trailer sales moving.

The trailer companies have thus shown their flexibility in dealing with the crisis period of the last couple of years—helped by the exports—but although there seem to be signs of recovery in the domestic market, the glimmer at the end of the tunnel remains a little dim.

Peter Foster

Caravans take a knock

MOTOR CARAVANS, seen as one of the profitable growth sectors for commercial vehicles, have taken a knock over the past two years. From U.K. sales of 15,000 to 16,000 a year in 1972 and 1973, demand dropped last year to around 8,500 and sales this year are not expected to be more than 5,000.

As production schedules have been phased down in the wake of this downturn in demand, re-dundancies have resulted and several of the smaller com-panies carrying out conversions have closed down.

Accurate statistics are difficult to obtain as the definition of motor caravan tends to be rather loose. The term is generally taken to mean vehicles, such as the Volkswagen Continental, which can be used both as a normal family car and for holi-days. Usually the vehicle is equipped with a small sink unit and perhaps four bunk beds.

The trailed caravan has always been popular in Britain and, with increased leisure time and growing prosperity, the motor caravan assumed an important role. The British market is now probably second only to that of America where the motor home tends to be far bigger and grander and where sales in 1974 were well over 100,000.

retailed at £2,878, was priced this September at £3,924. Confirmation, if any were needed, that the higher prices are restraining sales comes from the reports of heavy demand for second-hand vehicles.

Despite the current setback, there is a widespread belief that in the longer term prospects are good. Once the national economy begins to pick up towards the end of 1976, if current forecasts prove correct, then the customers should return. The salesmen point out that at a time when hotel bills are rising a motor caravan is a good way to cut the price of holidays.

One man who reflects the confidence of the sector is Mr. Iain Macpherson, managing director of CI Automobiles, a company which claims to carry out conversions for a third of the vehicles sold in the U.K. market. "The market has bottomed out. We have gone through a period of retrenchment and in 1977 we shall start feeling the benefits of the upturn."

He points to the growth of motor caravan hire as one factor which will help to compensate for any fall in direct sales to customers. Despite the gloom, companies offering hire facilities have enjoyed a good year and Mr. Macpherson believes such services will be used increas-ingly by foreign tourists visiting the U.K.

CI, or Caravans International, was formed through the merg-ing of many independent motor producers and is one of Europe's leading manu-facturers of trailer caravans. However, the potential for motor caravans is also appreciated and Mr. Macpherson's company is looking for growth.

Suited

VW, with its rear-engined vehicles and a flat petrol engine tucked away at floor level, is well suited for conversion to motor caravans. The company is confident about future sales in the U.K. and is sure these will be realised once the national economy becomes stronger.

In addition to CI and Devon, there are many other companies which carry out conversions to motor caravans but the dramatic decline in sales has caused a general shakeout of produc-tion. While a number of com-panies have switched their at-tention away from the sector to other products, some businesses have gone into liquidation.

Though VW remains the major importer of vehicles for conversion, Toyota and Fiat are also becoming important. Toyota in particular, with its Hi-Ace and Hi-Lux range has increased its share of the market. Beyond the prospects for motor caravans in the U.K., there is a great deal of potential still to be realised within Europe. But it seems unlikely that European tastes will ever become as grand as those of America.

The greater prosperity and proclivity to consume within the U.S. has created a major market for motor homes. The typical American motor caravan will be based on a three-to-five ton chassis and will be accordingly much more spacious. Rather than just the basics, facilities are likely to include air condi-tioning, refrigerators and a television.

The usual pattern of produc-tion is for specialist manu-facturers to buy in the engine and chassis but build their own bodywork. By adopting produc-tion line methods—a trend being copied in this country, particularly by CI—costs can be held down.

Without going to the extremes favoured by the Americans, manufacturers in the U.K. should be able to produce designs to meet the needs of what must be a growth market over the next decade or so.

Volkswagen, whose sole authorised converter in this country is Devon Conversions, claims that it meets around 40 per cent of the U.K. market

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TM1700	4x2 RIGID	160	11.24	16.00	24.60	500	151	5SP. TURNER
TM1700	4x2 RIGID	193	11.13	16.00	24.60	500	151	5SP. TURNER
TM1700	4x2 RIGID	193	10.47	16.00	32.00	6V-71	216	9SP. FULLER
TM1700	4x2 RIGID	206	11.09	16.00	24.60	500	151	5SP. TURNER
TM1700	4x2 RIGID	206	10.43	16.00	32.00	6V-71	216	9SP. FULLER
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TM2300	4x2 TRACTOR	109	18.30	—	22.64	500	151	6SP. EATON
TM2500	4x2 TRACTOR	118	19.90	—	24.60	500	151	6SP. EATON
TM2600	6x4 RIGID	175	17.69	24.00	25.60	500	151	6SP. EATON
TM2600	6x4 RIGID	175	17.11	24.00	32.00	6V-71	216	9SP. FULLER
TM2600	6x2 RIGID	200	17.92	24.00	25.60	500	151	6SP. EATON
TM2600	6x2 RIGID	200	17.36	24.00	32.00	6V-71	216	9SP. FULLER
TM3250	4x2 TRACTOR	118	26.73	—	32.00	6V-71	216	9SP. FULLER

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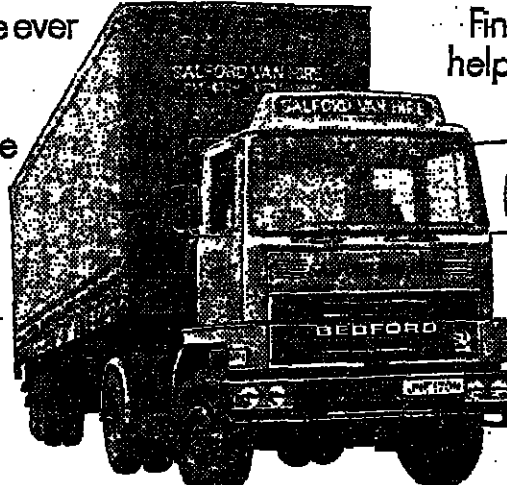
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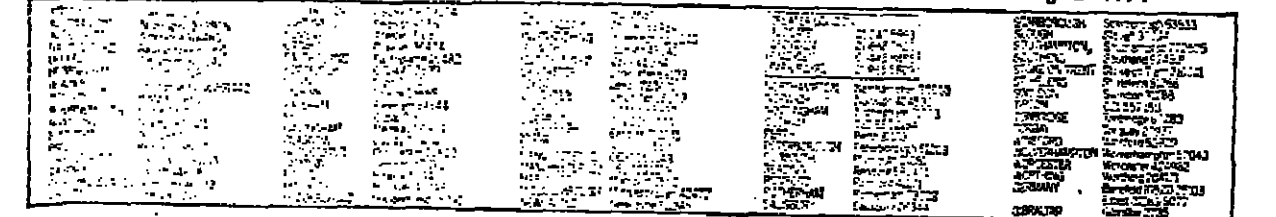
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A force on world markets

WHILE BRITAIN'S car industry has become small-scale even in European terms, its commercial vehicle industry has maintained its place as one of the largest in Europe and is still a major force in world export markets. Within this overall situation the industry has undergone a considerable change in structure over the years.

In 1959 there were some 50 independent CV producers in the U.K., each of some significance in the bus and truck market. By 1975 ten competitors remained, four of which — Ford, Bedford (GMC), British Leyland and Chrysler — accounted for about 98 per cent. of total production. However, in the heaviest vehicle class of 28 tons and above the "other" firms still have over 30 per cent. of sales, while in the 24-ton plus "rigid" market Foden's eight-wheelers have around 37 per cent. of the market, just behind Leyland's 40 per cent. It is in this heavy vehicle sector, the bus market and that for highly specialised "environmental" vehicles — refuse collectors, fire engines, etc. — that the small firm survives.

Many of the companies competing in 1950 concentrated on the light and medium weight sectors. Consequently, when the mass producers such as Bedford began to move up the weight scale, utilising their efficient low unit cost manufacturing techniques to the full, the smaller producers could not justify the price premiums they needed to stay viable through a commensurate difference in quality. The result was sufficient financial embarrassment for companies either to leave the industry completely or be absorbed by other, mainly heavy vehicle, producers.

In the post-war period three specialist firms emerged as being larger than average: Leyland Motors, Associated Commercial Vehicles and Jaguar (Daimler-Guy). In addition, Chrysler's long-established subsidiary at Kenilworth had facilities to make over 5,000 chassis a year. The first three groups absorbed other makers and then merged among themselves, all eventually coming under the umbrella of BLMC.

Eroded

Such was the concentration of managerial and financial resources at BLMC on the reconstruction of the car side's fortunes, that the truck and bus division, which, apart from Bathgate and the Leyland Motors and Jaguar CV operations, was neglected and BLMC's strong initial position in heavy CVs was eroded. Much needed investment in plant expansion and modernisation, and in new products, was sacrificed to expenditures on the less profitable car side.

This, allied to conservative investment policies by the specialists, meant that the excess demand for heavy CVs, significant since 1964, became acute between 1970 and 1974. This state of affairs increased imports so that by 1974 Sweden's Volvo had 19 per cent. of the 28-tonne gross and above market, to BLMC's 23 per cent., ERF's 13 per cent., Foden's 6 per cent. and Seddon-Atkinson's 12 per cent. In 1974 the total import share of the heavy CV market was 34 per cent., and for vehicles capable for use at over 32 tonnes, 46 per cent.

The U.K. makers have retaliated, for whereas in 1972 the "others" in the U.K. heavy CV industry had a combined capacity of 7,000 chassis a year, by 1976 this is likely to be around 18,000. In addition, first-class products such as Leyland's Marathon truck are coming onto the market at a rate of 2,000 units a year. Despite the phasing out of Guy production at Wolverhampton, some 2,000 units a year, there has been considerable expansion in U.K. heavy CV making facilities. This increased availability, allied to a downturn in the market, produced a significant drop in import penetration in 1975.

BLMC's monopoly of heavy bus chassis making, plus a long-

PRE-TAX PROFITS ('000)

	Seddon	Atkinson	ERF	Foden	BLMC (Truck & Bus) estimated
1970	817	404	735	1,086	8,000
1971	840	763	915	1,295	8,000
1972	367	—	453	752	6,000
1973	781	—	921	1,144	9,000
1974	—	—	930	301	6,000

BLMC WEEKLY OUTPUT (1975)

Leyland (Lancashire)	150 truck and bus chassis	Guy	45 truck chassis
Albion (Glasgow)	100 truck chassis	Scammell	40 truck chassis
Bathgate	470 trucks	AEC	115 truck and bus chassis
Bathgate	370 agricultural tractors	Bristol	16 bus chassis
		Leyland National	22 bus chassis

SPECIALIST CAPACITY (ANNUAL 1975/6)

ERF	5,000	Bristol	1,300*(1)
Seddon-Atkinson	5,000	Leyland National	2,000*(1)
Foden	7,500	Alisa (Volvo)	300
Dennis	1,000	Metro-Scania	500

MASS PRODUCERS ANNUAL CAPACITY (Approximate)

Car Derivative CVs*(2)	Medium Vans	Trucks: Light Medium Heavy (24 tons +)
Ford	40,000	45,000 70,000 1,000
Chrysler	—	15,000 5,000 5,000
Bedford	25,000	40,000 30,000 40,000
BLMC	50,000	30,000 55,000 20,000
BLMC (Land Rover)	55,000	—

* (1) Associate companies of BLMC.

* (2) "Capacity" depends on car/car derivative output mix.

term growth in the demand for double deckers, aggravated by a short-term boom, created by the Bus Grant scheme has given an opportunity for new entrants, Volvo's Scottish-based Alisa subsidiary and the British Metro-Cammell company from Birmingham have already made significant inroads, while Foden and, perhaps, Dennis, hope to follow them. Therefore, even in 1975 it is possible to enter the motor industry to serve a central market, as long as productive activities are confined largely to the assembly side.

Vehicle manufacture consists of four main functions: foundry work to produce castings; forging and machining; steel press work; final assembly. Of these, activities assembly has the lowest optimum output level measured on an annual basis. The large capital investment required to establish special-purpose, high-speed equipment means that operations such as cab-making and major component manufacture is only efficiently undertaken, and therefore profitable, in a competitive industry, when very large volumes can be made and sold.

Many quite large Continental heavy vehicle makers have been over-capitalised with regard to the scale of operation undertaken. On the other hand, the U.K. industry has evolved a highly efficient structure which involves even the larger firms in buying out a high proportion of requirements, and a specialised heavy vehicle sector which concentrates mainly on pure assembly, any manufacturing being done by techniques appropriate to low annual output volumes. As a result, even large-scale manufacturers use bought-out items such as gearboxes from even larger-scale component makers, while the small-scale specialists have been able to enjoy external economies of scale.

The small companies, by keeping their assembly operations at a high degree of efficiency (for instance, ERF recently reduced the time for engine installation from four hours to 10 minutes), have survived and prospered by being able to purchase diesel engines, axles, gearboxes, cabs as well as the usual bought-out items such as electrical equipment, from large-scale suppliers who themselves incur the cost and risk of high capital investment in the equipment. A small assembler if engaging in cab making will utilise glass-fibre where tooling costs are one-fifth of those needed for a pressed steel cab. However, as material and other direct costs are greater than at output levels between 25,000 and 30,000 vehicles a year, steel is more economic; but for lower volumes glass-fibre is the more efficient technique, a lesson fully absorbed by British producers. As most small U.K. CV makers tend towards pure assembly with little in-house manufacture and as long as sufficient external economies are obtained for cost plus pricing to be viable, the break-even output levels are normally a very small proportion of total capacity, fixed costs being so low.

It would be very wrong to suppose that because the motor industry and large-scale output appear to be synonymous, that the small-scale CV specialists are at risk in competing with larger firms in the small market for heavy vehicles. In fact, the large-scale Continental makers often produce engines and cabs at lower output levels, but at higher cost, than British specialists such as Perkins or Motor Panels.

Therefore, by concentrating on the small-scale assembly of premium products utilising bought-out components made in large numbers, the likes of ERF and Seddon-Atkinson have found themselves in a prosperous position. Foden is the most "manufacturing-orientated" of the specialists, but by using simple equipment has managed to keep prices within 5 per cent. or so of the assemblers, a premium the customer has willingly paid to obtain a fully bespoke product.

However, the company's expansion is based mainly on pure assembly activities; the weekly capacity in 1975-76 being 120 for assembly and 12 chassis a week on the manufacturing side. Despite the greater commitment to manufacturing Foden has tended to generate the highest level of profits in absolute terms, although because pure assembly needs less capital ERF has earned 25 per cent. on capital to Foden's 15 per cent. over the period 1970-74.

In the period 1970-74 BLMC's Truck and Bus Division produced some 40 times as many vehicles as, say, ERF but the prosperity of the small heavy vehicle specialists is shown by their higher relative profit — small-scale specialists have been

Size

Nevertheless in the heavy sector BLMC is of sufficient size and efficiency, despite past underinvestment, to compete on equal terms with other major heavy truck makers. What is required is extra bus-making capacity and capacity for the manufacture of spare parts.

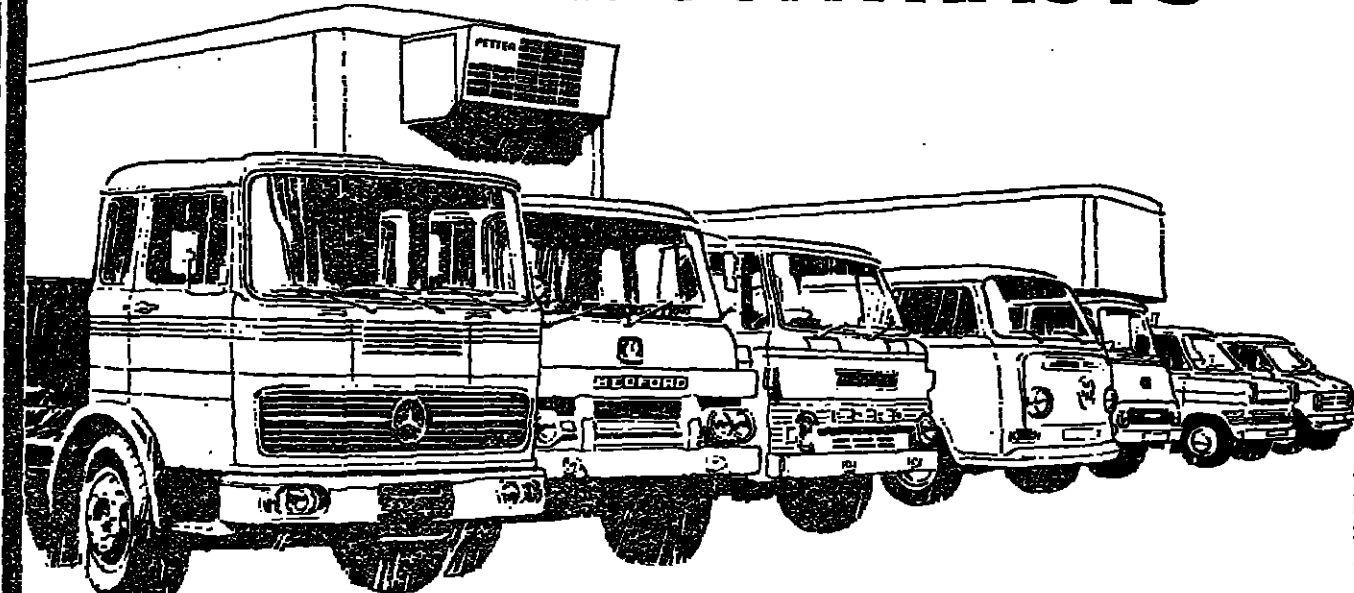
The small scale U.K. CV makers should, with good management, continue to prosper being but the assembly "tip" of a strongly based commercial vehicle component-making infrastructure.

This shows that a small efficiently run firm can survive in competition with larger firms by meeting the specific needs of a small specialised market: a market in 1975 of perhaps 20,000 heavy trucks and buses. As U.K. manufacturing facilities are capable of meeting most of this, many importers in the middle of costly investment incurred in trying to break into the U.K. may find their position seriously at risk and be provoked into starting a price war.

Garel Rhys

Lecturer in Economics, University College, Cardiff

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مركز ابحاث

A wrong turning in the jobless debate

BY SAMUEL BRITTAN

ARMCHAIR strategists are fond of saying that one should not fight on two fronts. Yet sometimes this is quite unavoidable. An outstanding example is the interpretation of the unemployment figures, where there are two opposite kinds of misunderstanding which stand in the way of enlightened policy.

On the one hand we have the Heath-Bealey view, wrongly called moderate, or middle-of-the-road, which takes the headline unemployment figure of nearly 1.2m. at face value as indicating a pool of people hopelessly unable to find jobs. This figure was put at 1.3m. for the ten major industrial countries by the Chancellor in his Mansion House speech last month. The only speech last month, according to this school of thought, is to give the unions an even greater say in our affairs in the hope of obtaining wage restraint, after which it will be possible and safe to bring down unemployment to, say, 500,000 by the traditional expedient of pumping more money into the economy ("redation").

Equal danger

But an almost equal danger is provided by those who attempt to analyse the unemployment figures down to nothing, who try to draw hard and fast lines between voluntary and involuntary unemployment, and who do not realise that the size of the minimum sustainable level of unemployment cannot of its nature be discovered directly by examining the composition of the unemployed.

These reflections have been caused by reading a booklet, which is in many ways excellent, but which falls into the trap just mentioned. This is

John Wood's *How Little Unemployment?* published to-day by the Institute of Economic Affairs. Mr. Wood proposes a "strategic indicator" of men aged 25-55, out of work for more than six months, minus "unemployables". The calculation gives a range of between 40,000 and 120,000 within the last five years, or rarely more than 1 per cent. of the active population. Mr. Wood proposes to use this figure as a "strategic indicator" to guide demand management.

"I have, from the start, been unhappy even with the more moderate 'corrected' unemployment figures published by Sir Keith Joseph's Centre for Policy Studies; but because my only objections are somewhat technical and the results are broadly plausible (even if I have not laboured my misgivings, but when the corrections are pressed to the extreme of the IEA paper, it is time to dissociate myself, especially as I am listed as one of those who offered comments."

Mr. Wood's earlier paper, *How Much Unemployment?* published in 1972, was an important pioneer analysis of the deficiencies of the headline unemployment total, and it largely inspired most of my own ideas on how to break down the total into suitable categories. Indeed, his own new paper contains the best guide I know to the new labour market data produced by the Department of Employment.

A slump in modern conditions is not for most of the unemployed a state of affairs in which it is "impossible to get a job". It is a state in which people looking for new jobs have to accept worse pay, or wait longer, or move further, or accept inferior conditions, or

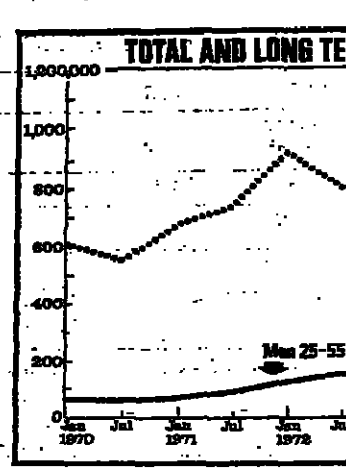
undergo a greater degree of re-training than in normal times; and no unemployment figure can do more than summarise such changes in conditions in a given social security framework. I recently spent some time in the Glasgow South Employment Exchange talking to people starting gloomily at the unskilled vacancy notice board. When I asked what was wrong with the jobs on offer, the reply was invariably "The money. It's no better than we are getting now out of work."

When trade recovers, these workers will have a better choice of jobs and spend a shorter period on the register. But what is the corresponding unemployment percentage which represents neither a runaway boom nor a slump, but a sustainable state of the labour market? This has been called the "natural rate" by Professor Milton Friedman, an unfortunate name with which we are probably stuck.

Analysis

The key to this sustainable or "natural" rate is that it cannot be discovered by a statistical analysis of the components of unemployment. Indeed, Mr. Wood comes near to the point in a footnote on page 11, where he says "Some economists might argue that the continuing increase in earnings and wage rates, unaccompanied by similar increases in output, provides evidence of excess demand. The trouble with this view is not that it is generally regarded as old-fashioned, but that it leaves out of account inflationary expectations. If prices have been rising at 20 per cent. per annum and are expected to continue un-

changed, an increase in money wages of that amount would be required to keep real wages constant. In a sustained inflation, double digit wage increases can be perfectly consistent with balance in the labour market. To get wage increases down to the productivity trend, say 3 per cent., would require a slump, that is a period of deficient demand; and excess in demand will show itself (allowing for time lags, etc.) not just in inflation, but in accelerating inflation."



derstand, the 'natural' rate of unemployment is not, as Mr. Wood says, that consistent with stable prices, but that consistent with any stable rate of inflation (of which zero is but an example) which neither accelerates nor decelerates. If one derives the "natural" rate from the behaviour of wages and prices (with whatever time lags and complications); one cannot derive it from a statistical breakdown of the unemployment figures. Otherwise, it will be "over-determined." Failure to take this simple logical point on board weakens the contribution

of many monetarists and downward shift in the trend figure should be convincing. Confining the "strategic" indicator to men aged 25-55 is going far too far in making exclusions at both ends of the age range. But what really bothers me is those who have been on the register for six months or less are excluded. This ignores the fact that many of these people will continue on the register for a good deal longer by the time they obtain a job. Even if one believes that those out of a job for less than six months are short-term job changers, the number will be approximately represented by those now on the register for less than two or three months. (See Department of Employment Gazette, March 1975.)

In fact it is no longer necessary for outside bodies to calculate "adjusted" unemployment totals at all, since the Department of Employment has been doing this already since this summer. The monthly Press notice now contains a figure of unemployed for over four weeks (statistically equivalent to the number who will remain out of work for up to 12 weeks) aged 60 and under. These amounted to 754,000 in October. There is an argument for taking off another 100,000 to allow without double counting for the absolute numbers regarded as "poor prospects and unenthusiastic" in the official 1973 survey; and it would be desirable to have the figure seasonally adjusted. But the DE has gone a long way to meet the critics of its statistics, even though neither Mr. Michael Foot nor the radical right chooses to pay any attention to the new series it has produced.

Mr. Wood's analysis of the misguided policies pushing up the natural rate of unemployment is very much to the point. If I do not emphasise them more in this article, it is because they are common ground and have been discussed on this page before. Indeed, it is because these distortions of the labour market are so paramount that I doubt if the unemployment problem is as modest as the Wood indicator suggests.

A demand management policy geared to the very long-term unemployed would also lead to bad mistiming. For reasons of simple arithmetic, the long-term unemployed reach a maximum even later in the business cycle than the adult total. As the chart shows, long-term unemployment reached a peak in the summer of 1972, about six months later than the simple total. If Mr. Wood's "strategic indicator" has been used as a guide to demand management, policy would have been even more badly mistimed, with an even greater "too much too late" element, than it actually was.

Objectives
A breakdown of the unemployment categories is helpful mainly in a secondary propagandist way in explaining that if the natural rate is, say, a million, it does not involve all the social hardship and economic waste, which it appears to do on a simple-minded interpretation. It should, moreover, be possible to show that the greater part of the difficulty in, for instance, placing school-leavers or redundant workers, results not from the absolute level of unemployment but from increases in it; and it might therefore be better long-term trend of industrial production, suggest that production was 3 per cent. above trend in the autumn of 1973 compared with 10 per cent. below trend this summer, a total swing of 14 per cent. Even if there has been, as I suspect, a vertical

shift in the trend figure should be convincing. Confining the "strategic" indicator to men aged 25-55 is going far too far in making exclusions at both ends of the age range. But what really bothers me is those who have been on the register for six months or less are excluded. This ignores the fact that many of these people will continue on the register for a good deal longer by the time they obtain a job. Even if one believes that those out of a job for less than six months are short-term job changers, the number will be approximately represented by those now on the register for less than two or three months. (See Department of Employment Gazette, March 1975.)

There is, however, one policy suggestion which is rather unfortunate. This is that "to be paid more than minimum benefits after six months," an unemployed person should either "have to prove his determination to work or accept attendance at a retraining centre." Very little public money could be saved this way, as earnings-related benefit comes to an end after six months; and the longer a person is out of work the greater is the pressure on officials granting benefit to take a job involving a drop in pay or status.

I am quite sure that Mr. Wood does not mean it this way; but this kind of hint plays into the hands of those who wish to reduce Government intervention because of resentment at the rather modest payments to the inadequate and the maladjusted rather than from a libertarian belief in enlarging freedom of choice. A really drastic clampdown on benefits to stop people "scrounging" or "opting out" may well be politically acceptable (though it is not what Mr. Wood is advocating). If combined with a policy of forcing able-bodied people with private means to work as well, it might satisfy the nation's current notions of fairness and sweep the country. But it is not a country in which I would wish to live.

Mr. Wood's analysis of the misguided policies pushing up the natural rate of unemployment is very much to the point. If I do not emphasise them more in this article, it is because they are common ground and have been discussed on this page before. Indeed, it is because these distortions of the labour market are so paramount that I doubt if the unemployment problem is as modest as the Wood indicator suggests.

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Letters to the Editor

Press freedom and the NUJ

From the National Organisation of Journalists.
Sir—Mr. R. J. Farmer's latest contribution to the marathon debate over Press freedom (October 29) readers a grave disservice to our readers and not for the first time from Mr. Farmer's organisation to journalists at large.

The idea of Big Brother NUJ censoring industrial correspondents by remote control from its Acorn House headquarters is patently absurd.

Any close observer of the NUJ in recent years would have detected not the take-over of the union by a tiny faction of Left wing militants but the emergence of a loud and sometimes strident — dialogue between active groups of the membership (both Right as well as Left, for want of better terms) every time the union takes a major decision. The registration and Editors debates are the two most obvious examples.

One thing the NUJ clearly cannot do, nor would it ever wish to do, is to impose blanket uniformity on its members — journalists being what they are, they wouldn't stand for it any more.

And as a former industrial correspondent for more than six years — I even helped cover Labour matters for your own paper — may I also remove any fears on that front. I reported NUJ stories without any pressure from Acorn House whatsoever — an absence of pressure which isn't always the case in Fleet Street when it comes to writing industrial stories of immediate concern to newspaper proprietors.

Readers can draw their own conclusion from the way some national papers' own dealings with their own internal disputes are content to run bald statements from both sides — a practice not extended to other industries. And even on the better record than most papers — stories concerning Fleet Street's labour troubles received far closer personal scrutiny from the Editor at least in my experience there, than stories concerning industrial troubles elsewhere.

However, industrial correspondents no less than any other journalists are well aware of an important section of the NUJ's (binding) Code of Conduct — which Mr. Farmer seems to have overlooked in his perusal of our Rule Book — which calls on members to "strive to eliminate distortion, news suppression and censorship."

Noel Howell,
Acorn House,
314-320, Gray's Inn Road, W.C.1.

Opium of the people

From Mr. J. G. Medcalf.

Sir—I refer to the article by Chris Dunkley headed "Opium of the people" (October 29). For people like Chris Dunkley, television is of course a serious business, because writing criticisms is their bread and butter; but for the majority of people, television is entertainment, nothing more. Most of us have to do a hard day's work, confront many problems and perfections; when we have leisure and an opportunity to look in, we certainly don't want "difficult" plays, esoteric documentaries, worthy current affairs series, progressive/permissive

stuff, etc., etc.—from which defend us!

Too much time is devoted on TV to what is called "Political-Social stuff"—most of it is heartily sick of it, it is plugged to distraction, and usually contains subtle propaganda of one sort or another.

Let us have our entertainment, whether it be Crossroads, Cerebration Street, Generation Game, Upstairs Downstairs, or what you like, but at least it is some relief from the awful, constant plugging of these programmes which are nearly driving us up the wall.

J. G. Medcalf,
Thomas May and Co.,
Chartered Accountants,
The Lawns, 33, Thorpe Road,
Peterborough.

Textile imports

From the Chairman,
Kay and Roe Ltd.

Sir—Samuel Brittan is to be congratulated for his excellent article (October 30) regarding import controls.

As a former textile manufacturer and exporter, through sheer necessity, having had to deal with textile imports on a large scale, I would question his viewpoint that in textiles at any rate import deposits at moderate levels would be the least harmful compromise of the nine points suggested by the TUC. We have had these before and as a result one of the largest textile producers in the U.K. instructed their satellites that import deposits must not be paid. If necessary they must do without the imports. This decision was speedily reversed when their garments-manufacturing units were grinding to a halt through lack of supplies, substitutes for which were not forthcoming from the British makers.

Very quickly, British importers, having been given a piece of paper by the then Board of Trade, stating that the importers would be repaid the import deposit within six months, realised that the piece of paper was a good enough collateral on which to borrow from any convenient source thus nullifying almost completely the effect of the deposit scheme. I agree absolutely with Mr. Brittan that import controls mean higher prices and it is only human nature for the large producers of textiles in the U.K. which are extremely efficient, to cash in on a temporary shortage for their prices to be raised quite considerably.

I do not know how many European and other organisations would offend, but I put forward for consideration for textiles, a scheme similar to that which we had during the war and immediately afterwards.

Every producer of textiles had to produce a certain minimum of utility goods at a fixed price of fixed specifications. For every four yards of utility goods produced they were allowed to sell, I think, one yard of any specification and at any price they liked. This was called rationing and on this the producers made an extra profit to offset the almost lack of profit on the utility portion. Goods produced for export were free of any constraints. There is not enough British production to clothe the people. We cannot do without textile imports. The British industry by skill and higher wages is more capable of producing better quality ("non-utility") while the Far Eastern countries

cannot be beaten for mass-production qualities ("utility").

Give the British importer a certificate to import say £5 worth of goods for every £4 worth he buys from British producers. This will make him selective in his imports, make the overseas producer compulsorily competitive and produce business for the U.K. producer. Exports from British makers to count double. Prices on imports will be kept down; Britain will be assisted to develop the high quality industry which she could have done after the war, instead of trying to beat the low-wage countries at their own game. Textile prices are low compared with European standards, and provided we can produce enough, we could have a large export market.

Of course, there are many facets of the textile industry, but the principle mentioned above could without too much difficulty be adapted to all of them.

M. J. Midgley,
Church Bank House,
Church Bank, Bradford.

Just who tries hardest?

From The Managing Director,
Godfrey Davis (Car Hire) Ltd.

Sir—Having studied the article on car hire (October 21) I feel compelled to put the record straight as to who is No. 1, or No. 2, for that matter, in car hire in the United Kingdom.

While we certainly have no objection to Avis Rent a Car quoting their own organisation, we certainly do not think that they are in any position to make comments to the Press concerning the size of the rental fleets operated by this company.

To assist you in understanding our concern therefore we would like to point out that Godfrey Davis have been in the self drive car rental business in the U.K. since 1922; our combined car and truck daily rental and leasing fleets exceeded 14,000 vehicles in the summer of 1975, our passenger car daily rental fleet approaching 8,000 vehicles.

We therefore have the right to claim, and this has been very much part of some recent advertising claims, that we are undeniably No. 1 in Britain. You may have read our slogan "Being British And Biggest Does Make A Difference."

With 220 locations throughout the United Kingdom and Northern Ireland, being the official Fly/Drive contractor for British Airways in the United Kingdom and with our arrangement with British Rail whereby we have Rail Drive points at over 70 Main Line stations, we feel justified in writing to you and respectfully requesting that you put the record straight as to who is No. 1 in Britain.

T. J. Gibson,
Crown House,
North Circular Road, N.W.10.

Taxing works of art

From Mrs. Elizabeth Young

Sir—Reading the Green Paper on the wealth tax, I knew there was some deep folly embedded in it. Here was a public document, in many ways sensible, and serious about social justice, but which gave off a smell of ignorance whenever anything about works of art or architecture came up.

works of art are non-productive, he writes. The value of art and architecture slip through: Applied economies cannot grasp them, and they don't count as genuine assets which are recognisable because they "produce useful goods and services and provide employment," and because they serve "efficiency and equity."

As far as art and architecture go, the Green Paper itself was very odd. From paragraph 38, which reads "It would be difficult to single out a house which happened to be historic for treatment different from others." It is clear that the writers were quite unaware of the long established Statutory duty of the Secretary for the Environment to do just that; and also of the complex system of government grants which exist to protect "historic" houses. They are to be so protected because they are part of the heritage of all of us and are not to be considered merely as chunks of private property.

Dr. Ellman believes that only a "small number of very wealthy owners and dealers" are exerting "immense pressure" as he puts it, "to exempt from wealth tax [this] class of non-productive assets." He is wrong on all counts. Works of art and architecture are highly "productive assets." They could only be dispersed or destroyed with appalling loss to society. How, without damage, access to them may be broadened is a problem to which the industry is at present working. The Wealth Tax could only add. Moreover, this is a matter to which government supporters have given considerable thought; and one group has submitted evidence to the Select Committee on the Wealth Tax, which will be published in Appendix 74 of its report.

Elizabeth Young,
100, Boyeswood Road, W.2.

Measuring inflation

From Y. Kovach.

Sir—If only one could pass it off as another well meaning but silly manoeuvre. I have in mind the Minister of Prices' exhortation to the retailers, consumer goods manufacturers and nationalised industries that price rises be kept below the norm for certain items which just happen to feature prominently in the retail price index; the remaining items which presumably will be subject to above the norm price increases. One of the aims is to help the lower paid at the expense of the higher paid; let it be done explicitly financed out of general taxation rather than behind the smokescreen of the Prices Code.

The more important aim is that old favourite lowering the inflation rate at a stroke which reminds one of the tea-packet story. The room is too hot. The thermometer confirms this. A fridge is brought in. Some ice cubes produced and an ice-pack put against the bulb. The room is marginally hotter thanks to the workings of the fridge and the laws of thermodynamics but the thermometer, God bless its soul, registers a significant drop.

The moral of the story is that Her Majesty's Government can no longer be trusted to produce economic statistics which faithfully reflect what is actually happening. This is sad.

Y. Kovach,
42, Morley Road,
Twickenham, Middx.

To-day's Events

Queen inaugurates oil production from BP's Portles Field, Dye, Aberdeenshire.
Chrysler shop stewards hold meetings at Coventry and Lincoln to discuss company's crisis.
British trade mission headed by Lord Bessie, Minister of State for Industry, on nine-day visit to Iran.
FMC annual meeting votes on proposal that four directors be replaced by NPL Development Trust nominees, London.
President Sadat of Egypt continues official visit to U.S.
Blastfurnacemen's pay inquiry team visits steelworks at Scunthorpe.
Boiler-makers' Amalgamation members employed at yard of

Govan Shipbuilders meet in effort to settle their strike.
British pharmaceutical trade mission on visit to China.
Dr. Shirley Summerskill, Parliamentary Under-Secretary of State, Home Affairs, opens International Women's Year Exhibition, Woolwich.
Mr. R. H. Hutton, director of financial institutions, Commission of European Communities, Brussels, addresses Insurance Institute of London on Prospects for Common Market in Insurance.
20, Aldermanbury, E.C.2, 5.30 p.m.
London Transport fares increased 26 per cent. Minimum

Underground fare now 10p.
International Coffee Council meets London.
Price now to be shown on all fresh fruit and vegetables.
Office of Fair Trading starts mailing teaching pack, Thinking about Shopping, to more than 20,000 U.K. schools.
PARLIAMENTARY BUSINESS
House of Commons: Debate on European secondary legislation, followed by debate on Report of Renton Committee on preparation of legislation.
House of Lords: Airports Authority Bill, committee.
Trade Union and Labour Relations (Amendment) Bill, consideration of Commons amendment to Lords amendments.
Cinematograph Films Bill, second reading.
Employment Protection Bill, consideration of Commons message.
COMPANY RESULTS
Burgess Products Company (Holdings), full year.
COMPANY MEETINGS
See Week's Financial Diary on page 30.

EXHIBITIONS
Stamps of China Exhibition opens, Gibbons Gallery, 389, Strand, W.C.2.
Domestic and Contract Textiles Exhibition continues, Harrogate Exhibition Centre.
Exhibition of Environmental Design at St. Katharine-by-Tower continues, Design Centre, Haymarket, S.W.1.

ONLY TWA FLIES A NON-STOP 747 TO CALIFORNIA EVERY DAY.

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COMPANY NEWS

A B Electronic well placed for upturn

IN THE YEAR to July 4, 1975, AB Electronic Components continued its programme of capital expenditure having spent £10.5m, against £11m in the previous year.

This sum was invested to maintain the company's position in its product areas and the directors believe that, in consequence, it is well placed to take advantage of any upturn in the economy, says the chairman, Lord Brecon.

He points out, however, that in present circumstances a meaningful forecast is not possible. Although de-stocking by customers has generally come to an end and new products and increased export efforts should bring in more business, inflation remains the major problem.

Margins, he says, will be under pressure until the economy improves.

As reported on September 23, group pre-tax profit for the past year contracted from £908,063 to £578,265, and the dividend was 4.104p net per share (taxed).

Not only was the company hit by world recession and inflation but, once again, Government action curbed the sales of customers' products in the U.K. electronic consumer goods sector.

For several years a policy of product diversification has been followed to reduce reliance on consumer electronics. However, the home entertainment industry is the major mass market for components and accounts for roughly 30 per cent of sales.

Lord Brecon stresses that it would not be in the company's best interests to reduce its penetration of the home entertainment market. But future product development has to be directed to those areas where greater market stability can be expected.

The recently announced expansion of the hybrid microcircuit facilities and the programme of enlarging the range of precision and semi-precision wirewound variable resistors and switches all form part of the policy to provide new outputs.

The chairman reports that stocks were reduced and net bank borrowings were halved to just over £50,000 at the year-end. The liquidity position has therefore improved, in spite of cost escalation.

Group sales outside the U.K. amounted to £4.23m. (14.54m) in 1974, and net assets were £12.62m. (14.54m) at April 5, 1974, and net assets were £12.62m. (14.54m) at April 5, 1974, and net assets were £12.62m. (14.54m) at April 5, 1974.

The directors say that despite difficult conditions in the construction industry, turnover was maintained, but at margins—particularly in the first quarter—less satisfactory than normal. Price increases came into effect during the second quarter, however, and current margins are more consistent with those achieved in the past.

Demand for most products remains high, and the outlook is optimistic.

The Annual General Meeting was held on 31st October 1975 in London. The following is an extract from the statement of the Chairman, Mr. K. Whitty:—

Our share value is slightly more realistic today than at the same time last year, taking account of our continuing expansion and I am pleased to report that in the first six months of the current year our turnover has increased by nearly 14% compared with the same period last year.

This is no mean achievement, taking into consideration that price reductions in timber products of up to 30% have taken place. In fact we are enjoying a larger share of a smaller market, which is a very good indicator for the future. I would not pretend that easy times lie ahead, but considering our achievement so far this year, I am optimistic that the current financial year will again be a successful one.

As you know, Mr. Sherwood, my joint Managing Director, was this year elected to be the President of the Timber Trade Federation. This high honour, to lead a very important trade, reflects not only his personal ability and leadership, but also a reflection on the respect and status of this company within the trade. I am very happy to say that he is able to strike the right balance between his very great new duties and responsibilities and his continuing full-time service to the company.

As my circulated statement shows, we spent last year over £600,000 on capital additions and improvements, and we shall continue our capital programme. Acquisitions will be made if and when the right opportunities arise.

I have the feeling that the crisis in the timber trade in the U.K. is coming to an end and we will have to become more realistic, in line with current buying prices and producers' costs. There is some cause for modest optimism.

The accounts for the year to 31st March 1975 were adopted and dividend of 2.136p approved.

PARKER HOUSE, 1-4 EVELYN STREET, DEPTFORD, LONDON SE8 5DE

Report and Accounts available from The Secretary, Abercynon, Mid-Glamorgan CF45 4SF

In his statement to shareholders, the Chairman, Lord Brecon, refers to:

- Investment of £800,000 in new plant during the year to maintain the Company's leading position in its product areas
- Decreasing reliance on consumer electronics; increasing penetration into high technology professional fields
- After 10 years of successful co-operation with CTS Corporation, U.S.A., agreements renewed for a further 10 years
- Improved Group liquidity

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for the second half "is encouraging." With margins now restored, the result should show a significant improvement over the first half.

The cash position remains strong, and some directors are considering the possibility of a dividend. The company is now a high priority, Statement page 29

Utd. Real Property values

AGGREGATE market value of the properties of Utd. Real Property Trust at April 5, 1975, was £18.32m. (14.54m) after less, etc. provisions. Book value of shareholdings in such associates, based on the directors' valuations in 1974, was £10.1m. They are of the opinion that the value of net tangible assets attributable to the company has fallen below this figure, but consider the market value of the fixed assets included in excess of the balance-sheet figure.

As the company's holdings in the associates are held as long-term investments, which the directors do not consider to have suffered a permanent diminution in value, no reduction has been made in the book value.

As known, net revenue, before tax, decreased from £1.42m. to £1.31m. in the past year and the dividend is 14.2 (14.1) per cent. See Lex

Lake View Investment

Total income of Lake View Investment Trust dropped from £1.08m. to £0.91m. during the half-year to September 30, 1975—over the previous full year the figure was £1.94m.

Scottish European Investment

Although gross income of Scottish European Investment Company decreased from £754,000 to £615,000 in the half year to September 30, 1975, this is offset by lower interest costs, and on the basis of present estimates of net income the directors expect last year's dividend—1.1p net—will be at least maintained this year.

Gross income for all the year to March 31, 1975, was £1,377,053. Net assets attributable to Ordinary shareholders at September 30, 1975, were £5,345,000, compared with £6,447,000 a year earlier, and net assets attributable to each share 46.5p (44.5p), including full investment currency premium of 5.5p (5p).

The greater part of borrowings was recently extended beyond the expiry date of the present loan agreement in 1977, by repaying a part of the present loans and replacing them under a separate agreement extending until 1980.

S. C. Banks expansion

Mr. Joseph Goolbsy, chairman of S. C. Banks, grain merchant and seed specialists, says that prospects indicate a year where the opportunity to maintain the current level of profitability may

not exist, but a year in which it will be intended to continue the policy of expansion and consolidation.

As reported October 15 group pre-tax profits rose from £398,436 to £487,778 in the year ended May 31, 1975, and the dividend is up from 2.6p to 3p net.

The group is actively expanding its involvement in agricultural chemicals and 1974-75 saw a large increase in sales.

Since the year end the company has acquired the capital of Joseph Odam, an animal feed business. While maintaining the existing business it is also intended to supplement this with a new arable division covering the full range of present trading activities.

The chairman believes that this will prove a "most useful" acquisition and a "very sound base" for the further expansion of the group's trading area.

Meeting, Cambridge, November 20 at noon.

Atlas Trust first half advance

PRE-TAX revenue of Atlas Electric and General Trust advanced from £1.32m. to £1.36m. for the half year to September 30, 1975, (1974-75 £1.32m.) after higher management expenses of £72,075, against £56,948, and interest charges up from £310,599 to £333,324.

An 0.4p net interim dividend, 0.3p net, has already been announced. The 1974-75 total was 1.15p from net revenue of £1.38m. First half tax absorbs £617,043 (£644,312), leaving £144,048 against £382,794 net.

After deducting prior charges at the year-end, net 25p share was 53.5p (44.9p), including the full investment currency premium 4.6p (3.9p). If investments were sold at valuation, asset values would be reduced by the 25 per cent. currency premium less 1.1p (1.3p) and 2.5p (1.2p) estimated tax on capital gains.

The increase in turnover has continued in the third quarter and, despite the current economic climate, the directors are sufficiently confident of trading prospects in the foreseeable future.

As before the interim dividend is 0.5p net per 25p share. Last year's dividend was 1.45p from profits of £410,809.

Meeting, Sheffield, November 24, noon.

Perak River prospects

Subject to any adverse factors, it seems likely that current year results of The Perak River Hydro-Electric Power Co. Ltd. will be much the same as those of the past year, says the chairman, Mr. H. G. Balfour.

As reported on October 25 group pre-tax profit for the year to July 31, 1975 was £2,214,631 (1974-75 £2,214,631) after a sharp rise in electricity costs, 17.5p (16.49p) net. Gross revenue from the sale of electricity, trading and other receipts increased from £11,62m. to £15,49m. (1974-75 £11,62m.) and the dividend is 17.5p (16.49p) net. Gross revenue from the sale of electricity, trading and other receipts increased from £11,62m. to £15,49m. (1974-75 £11,62m.) and the dividend is 17.5p (16.49p) net.

Since the year-end a rationalisation programme has been implemented, leading to a significant reduction of production capacity and product range. No material profit or loss is expected to result and any that does will be included in the current year accounts. Taking this into account, the directors expect a total dividend for 1975-76 of 3.6p (3.5p) net per share and no dividend is proposed for 1974-75. A total of 3.25p was paid for 1973-74.

Turnover for the year ended March 31, 1975, was £1,377,053. Net assets attributable to Ordinary shareholders at September 30, 1975, were £5,345,000, compared with £6,447,000 a year earlier, and net assets attributable to each share 46.5p (44.5p), including full investment currency premium of 5.5p (5p).

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not exist, but a year in which it will be intended to continue the policy of expansion and consolidation.

As reported October 15 group pre-tax profits rose from £398,436 to £487,778 in the year ended May 31, 1975, and the dividend is up from 2.6p to 3p net.

The group is actively expanding its involvement in agricultural chemicals and 1974-75 saw a large increase in sales.

Since the year end the company has acquired the capital of Joseph Odam, an animal feed business. While maintaining the existing business it is also intended to supplement this with a new arable division covering the full range of present trading activities.

The chairman believes that this will prove a "most useful" acquisition and a "very sound base" for the further expansion of the group's trading area.

Meeting, Cambridge, November 20 at noon.

Atlas Trust first half advance

PRE-TAX revenue of Atlas Electric and General Trust advanced from £1.32m. to £1.36m. for the half year to September 30, 1975, (1974-75 £1.32m.) after higher management expenses of £72,075, against £56,948, and interest charges up from £310,599 to £333,324.

An 0.4p net interim dividend, 0.3p net, has already been announced. The 1974-75 total was 1.15p from net revenue of £1.38m. First half tax absorbs £617,043 (£644,312), leaving £144,048 against £382,794 net.

After deducting prior charges at the year-end, net 25p share was 53.5p (44.9p), including the full investment currency premium 4.6p (3.9p). If investments were sold at valuation, asset values would be reduced by the 25 per cent. currency premium less 1.1p (1.3p) and 2.5p (1.2p) estimated tax on capital gains.

The increase in turnover has continued in the third quarter and, despite the current economic climate, the directors are sufficiently confident of trading prospects in the foreseeable future.

As before the interim dividend is 0.5p net per 25p share. Last year's dividend was 1.45p from profits of £410,809.

Meeting, Sheffield, November 24, noon.

Perak River prospects

Subject to any adverse factors, it seems likely that current year results of The Perak River Hydro-Electric Power Co. Ltd. will be much the same as those of the past year, says the chairman, Mr. H. G. Balfour.

As reported on October 25 group pre-tax profit for the year to July 31, 1975 was £2,214,631 (1974-75 £2,214,631) after a sharp rise in electricity costs, 17.5p (16.49p) net. Gross revenue from the sale of electricity, trading and other receipts increased from £11,62m. to £15,49m. (1974-75 £11,62m.) and the dividend is 17.5p (16.49p) net. Gross revenue from the sale of electricity, trading and other receipts increased from £11,62m. to £15,49m. (1974-75 £11,62m.) and the dividend is 17.5p (16.49p) net.

Since the year-end a rationalisation programme has been implemented, leading to a significant reduction of production capacity and product range. No material profit or loss is expected to result and any that does will be included in the current year accounts. Taking this into account, the directors expect a total dividend for 1975-76 of 3.6p (3.5p) net per share and no dividend is proposed for 1974-75. A total of 3.25p was paid for 1973-74.

Turnover for the year ended March 31, 1975, was £1,377,053. Net assets attributable to Ordinary shareholders at September 30, 1975, were £5,345,000, compared with £6,447,000 a year earlier, and net assets attributable to each share 46.5p (44.5p), including full investment currency premium of 5.5p (5p).

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AUTHORISED UNIT TRUSTS

[illegible]

INSURANCE, PROPERTY, BONDS

REGIONAL MARKETS

Following the merger last year of U.K. stock exchanges, a selection of the share prices previously shown under regional headings is presented below with quotations on London. Irish issues, most of which are not officially listed in London, are shown separately and with prices as on the Irish exchange.

[illegible]

FINANCIAL TIMES STOCK INDICES

	Oct. 31	Oct. 30	Oct. 29	Oct. 28	Oct. 27	Oct. 26	A year ago
Government Sec.	58.05	57.94	58.05	58.12	57.90	58.12	58.01
U.S. Int'l.	58.72	58.66	58.67	58.67	58.50	58.72	58.76
Industrial	58.54	58.44	58.54	58.54	58.44	58.54	58.54
Auto	58.67	58.57	58.63	58.57	58.44	58.67	58.65
Chem. & Allied	58.67	58.57	58.63	58.57	58.44	58.67	58.65
Pharm.	58.67	58.57	58.63	58.57	58.44	58.67	58.65
Food & Drug	58.67	58.57	58.63	58.57	58.44	58.67	58.65
Textile	58.67	58.57	58.63	58.57	58.44	58.67	58.65
Metals	58.67	58.57	58.63	58.57	58.44	58.67	58.65
Oil & Gas	58.67	58.57	58.63	58.57	58.44	58.67	58.65
Transportation	58.67	58.57	58.63	58.57	58.44	58.67	58.65
Utilities	58.67	58.57	58.63	58.57	58.44	58.67	58.65
Real Estate	58.67	58.57	58.63	58.57	58.44	58.67	58.65
Insurance	58.67	58.57	58.63	58.57	58.44	58.67	58.65
Finance	58.67	58.57	58.63	58.57	58.44	58.67	58.65
Other	58.67	58.57	58.63	58.57	58.44	58.67	58.65
Total	58.67	58.57	58.63	58.57	58.44	58.67	58.65

HIGHS AND LOWS

	1977		Stiver Compilations		Oct. 31	Oct. 30
	High	Low	High	Low		
Inst. Secs.	24.34 24.04	49.12 (47.1)	127.9 (47.16)	48.10 (47.0)	145.1	154.4
Fixed Int.	63.1 (24.5)	30.65 (31)	121.9 (11.61)	50.55 (3.77)	809.8	210.1
Ad. Unit.	550.0	149.4	44.0	4.4	55.3	44.7
					141.4	142.4
					166.7	164.7

S.E. ACTIVITY

10 Ontario Wey. Wmbling	735	100	01-18-80
11 Ontario Wey. Wmbling	735	100	01-18-80
12 Property Unit	962	100	
13 Bond Unit	962	100	
14 Bond Unit	962	100	
15 Bond Unit	962	100	
16 Bond Unit	962	100	
17 Bond Unit	962	100	
18 Bond Unit	962	100	
19 Bond Unit	962	100	
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96 Bond Unit	962	100	
97 Bond Unit	962	100	
98 Bond Unit	962	100	
99 Bond Unit	962	100	
100 Bond Unit	962	100	

FT—ACTUARIES IN

	Oct. 31	Nov. 30	Dec. 31	Dec. 22	Oct. 27	Oct. 24	A year ago
Industrial Group	140.14	140.75	141.19	142.78	139.86	141.78	75.67
500 Shares	185.33	185.90	186.54	188.63	185.75	187.37	81.63
Div. Yield pe	5.90	5.87	5.85	5.76	5.87	5.81	10.25
P/E Ratio (est.)	8.63	8.87	8.90	8.98	8.93	8.92	4.76
All Shares	150.22	150.95	151.43	153.33	150.80	152.31	78.63
Consolid. yield, pe	14.86	14.96	14.94	14.84	14.94	14.81	17.01

BASE LENDING RATES

AFT International	11 %	Julius S. Hodge	12 %
Allied Irish Banks Ltd.	11 %	Industrial Bank of Scot.	11 1/2 %
Anglo-Portuguese Bank	11 1/2 %	Jacobs, Knoll	11 1/2 %
Henry Ansbacher	11 1/2 %	Keyser Ullmann	11 1/2 %
Banco de Bilbao	11 %	Knowsley & Co. Ltd.	12 1/2 %
Banco de Jerez	11 1/2 %	Lloyds Bank	11 %
Bank of Cyprus	11 %	London & European	11 1/2 %
Bank of N. W. Ind.	11 %	London Mercantile	11 1/2 %
Equique du Rhone S.A.	11 1/2 %	Midland Bank	11 %
Barclays Bank	11 %	Samuel Montagu	11 %
Barnett, Christie Ltd.	12 %	Morgan Grenfell	11 %
Bremar Holdings Ltd.	12 %	National Westminster	11 %
Brit. Bank of Mid. East.	11 %	Northern Commn. Trust	11 %
Royal Bank of Can.	11 1/2 %	Norwich General Trust	11 1/2 %
Cayzer, Bowater Co. Ltd.	11 1/2 %	Porman Guaranty	11 %
Cedar Holdings	11 %	P. S. Refson & Co.	11 %
Charterhouse Japhet	11 1/2 %	Rossminster Accept'ns	11 1/2 %
C. E. Coates	11 1/2 %	Royal Trust of Canada	12 %
Consolidated Credits	12 %	Schlesinger Limited	12 1/2 %
Continental Trade Bk.	11 %	E. S. Schwab	12 1/2 %
Co-operative Bank	11 1/2 %	Security Trust Co. Ltd.	12 1/2 %
Copley & Bank	12 %	Shenstone Trust Co.	12 1/2 %
Cornhill Securities	11 %	Standard Chartered	12 1/2 %
Credit Lyonnais	11 %	Sterling Credit	12 1/2 %
G. R. Dawes	12 %	Thames Guaranty	11 %
Duboff Brothers	12 %	Trade Development Bk.	11 %
Duncan Lawrie	11 %	Twentieth Century Bk.	12 1/2 %
English Transcon	12 %	United Bank of Kuwait	11 %
First London Seas	11 %	Whiteaway Laidlaw	11 1/2 %
Antony Gibbs	11 %	Williams and Glyn's	11 %
Goode Durant Trust	11 %	Yorkshire Bank	11 %
Greyhound & Guaranty	11 %		
Grindlays Bank	11 %	Members of the Association	11 %
Guinness Mahon	11 %	5-day deposits 7 1/2. 1-month deposit	7 1/2 %
Hambros Bank	11 %	3-day deposits on basis of £10,000 and	7 1/2 %
Hawtin & Parizers	12 %	over £25,000 7 1/2 % and	over £25,000 8 1/2 %
Hill Samuel	11 1/2 %	Demand deposits 6 1/2 %	
C. Hoare & Co.	11 1/2 %		

[illegible]

OFFSHORE AND OVERSEAS FUNDS

[illegible]

COMPANY NEWS

Wigham Poland growth

Announcing taxable profit of £1.9m for the 15 months to March 31, 1975, compared with £0.000 in the year 1973, Mr. J. M. Poland, chairman of Wigham Poland Holdings, reports that all major operating companies are actively seeking profitable areas for expansion, both organically and by acquisition.

For example the company is keen to take advantage of its association with The Thompson Organisation and contacts overseas to further its experience of the North Sea oil market and in the coming year "the prospects appear favourable."

Dividends for the 15 months total 70 per cent, against 28 per cent in 1973, with a final of 40 per cent.

During the period the company expanded through a merger with Wigham-Richardson and Bevington, whose shares were acquired from Anglo-Continental Investment and Finance Company in exchange for shares and loan stock.

The group's business is that of insurance brokers, shipbrokers, chartering agents, transportation, forwarding and underwriting agents.

The ultimate holding company is Generale Occidentale S.A. France.

Mr. Poland describes the 15-month period as one of integration, planning ahead and consolidation in the midst of an unsettled business climate with costs, particularly salaries, rising steeply.

The coming year will see Wigham Poland, formerly Wigham-Richardson and Bevington, continuing to consolidate for the future.

Two major divisions, Reinsurance and U.K. Non-Marine, are forecasting "steady expansion" but in shipping, a world-wide recession will have an adverse effect on P. Wigham-Richardson and, in turn, may depress the Marine Insurance activities, he says.

Also, the company cannot look for a cushioning effect from investment income as 0.70p net per unit (0.75p last year) will be considerably reduced.

The results for the six months period are somewhat disappointing. Despite difficult conditions in the construction industry the company's turnover was maintained, but at margins—particularly in the first quarter—which were less satisfactory than normal.

Price increases came into effect during the second quarter, however, and current margins are more consistent with those we have achieved in the past.

Demand for most of our products remains at a high level, and the outlook for the second half of the year is encouraging.

With margins now restored the results should show a significant improvement over the first half of the year.

The cash position remains strong, and some diversification of the company's activities is now a high priority for the company's management.

The Financial Times proposes to publish a survey on Building and Construction in its issue of Monday 10th November 1975. The proposed editorial content is as follows:

1. Introduction.
2. Housing.
3. Land.
4. The Industry.
5. Overseas work.
6. Labour.
7. Safety.
8. Builders' merchants.
9. Bricks and cement.
10. Other materials supplies.
11. Mechanisation.
12. Plant hire.
13. Building services.
14. Energy conservation.
15. Research and technical development.
16. Contract and tendering terms.

We would point out that the contents and date of the Survey are subject to complete editorial discretion.

For further information and advertising details please telephone 01-248 8000, Ext. 389

FT Monthly Survey of Business Opinion

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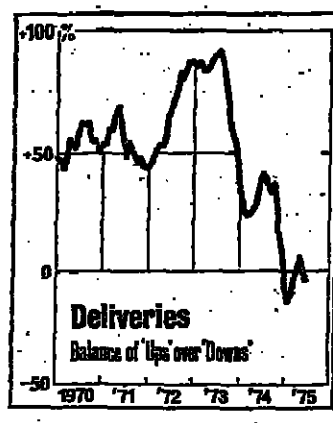
GENERAL OUTLOOK

Confidence revives

ON BALANCE industry sees the present situation as no more depressing than four months ago: to that extent it can be said that business confidence has stabilised, perhaps with a tendency to show a very slight recovery.

The principal factor appears to be the view which industry is now taking of the general economic situation, where companies are making comparisons with the period immediately before the £6 a week ceiling was imposed on pay increases.

On their own corporate situation, the trend is still slightly downward: the general attitude seems to be typified by the remark "gloom as forecast."



deepening and, although inflation expectations have been somewhat abated, a recovery in profitability is not foreseen. In the current situation planning can at best be made only a few months ahead.

Export expectations, hitherto the one bright spot in an otherwise very depressing situation, appear to have been scaled back in recent months. In engineering, de-stocking has been added to the decline in demand in most world markets.

Chemical companies report increasing Japanese competition in EEC countries, which are always difficult markets.

GENERAL BUSINESS SITUATION

	July-Oct.	June-Sept.	May-Aug.	Apr.-July	Eng's (non-elect.)	Chemicals	Shipping and Oils Transport
Are you more or less optimistic about your company's prospects than you were four months ago?							
More optimistic	28	26	24	24	17	33	15
Neutral	35	35	35	36	71	37	79
Less optimistic	37	39	41	40	12	30	6

EXPORT PROSPECTS (Weighted by exports)

	July-Oct.	June-Sept.	May-Aug.	Apr.-July	Eng's (non-elect.)	Chemicals	Shipping and Oils Transport
Over the next 12 months exports will be:							
Higher	68	72	76	84	55	67	65
Same	12	12	10	8	23	3	35
Lower	14	13	11	8	22	12	—
Don't know	6	3	3	—	—	18	—

NEW ORDERS

	July-Oct.	June-Sept.	May-Aug.	Apr.-July	Eng's (non-elect.)	Chemicals	Shipping and Oils Transport
The trend of new orders in the last four months is:							
Up	26	29	30	25	4	7	15
Same	16	15	19	21	42	1	8
Down	54	53	42	37	54	92	77
No answer	4	3	9	17	—	—	—

PRODUCTION/SALES TURNOVER

	July-Oct.	June-Sept.	May-Aug.	Apr.-July	Eng's (non-elect.)	Chemicals	Shipping and Oils Transport
Those expecting production/sales turnover in the next 12 months to:							
Rise over 20%	1	1	4	3	—	—	—
Rise 15-19%	1	7	8	8	13	1	—
Rise 10-14%	2	2	2	2	4	1	—
Rise 5-9%	15	12	16	26	29	35	—
About the same	56	60	56	46	46	7	38
Fall 5-9%	10	7	7	7	—	26	—
Fall over 10%	5	2	1	3	—	1	62
No comment	10	9	6	5	8	29	—

STOCKS

	July-Oct.	June-Sept.	May-Aug.	Apr.-July	Eng's (non-elect.)	Chemicals	Shipping and Oils Transport
Raw materials and components over the next 12 months will:							
Increase	17	19	17	15	37	4	15
Stay about the same	56	53	49	54	42	63	85
Decrease	24	25	31	29	21	33	—
No comment	3	3	3	2	—	—	—
Manufactured goods over the next 12 months will:							
Increase	17	18	15	9	—	4	15
Stay about the same	46	35	34	40	71	62	79
Decrease	25	30	34	36	8	32	—
No comment	12	17	17	15	21	2	6

FACTORS CURRENTLY AFFECTING PRODUCTION

	July-Oct.	June-Sept.	May-Aug.	Apr.-July	Eng's (non-elect.)	Chemicals	Shipping and Oils Transport
Home orders	83	80	72	80	100	100	98
Export orders	52	50	46	47	100	70	92
Executive staff	1	2	5	4	—	—	—
Skilled factory staff	10	9	12	13	33	1	2
Manual Labour	4	6	6	6	—	—	—
Components	9	10	5	10	33	—	2
Raw materials	1	3	9	9	—	—	—
Production capacity (plant)	n	1	2	4	—	—	—
Finance	1	1	3	7	17	—	—
Others	4	1	1	1	—	—	62
Labour disputes	20	24	23	21	4	1	69
No answer/no factor	6	6	9	9	—	—	—

LABOUR REQUIREMENTS (Weighted by employment)

	July-Oct.	June-Sept.	May-Aug.	Apr.-July	Eng's (non-elect.)	Chemicals	Shipping and Oils Transport
Those expecting their labour force over the next 12 months to:							
Increase	5	4	4	5	—	2	42
Stay about the same	58	60	50	50	89	53	45
Decrease	37	36	46	45	11	45	13

CAPITAL INVESTMENT (Weighted by capital expenditure)

	July-Oct.	June-Sept.	May-Aug.	Apr.-July	Eng's (non-elect.)	Chemicals	Shipping and Oils Transport
Those expecting capital expenditure over the next 12 months to:							
Increase in volume	31	20	—	—	45	86	52
Increase in value	—	—	28	29	—	—	—
but not in volume	8	8	—	—	17	—	15
Stay about the same	25	32	27	27	8	—	22
Decrease	35	38	43	42	30	14	11
No comment	1	2	2	2	—	—	—

COSTS

	July-Oct.	June-Sept.	May-Aug.	Apr.-July	Eng's (non-elect.)	Chemicals	Shipping and Oils Transport
Wages rise by:							
0-4%	—	—	—	—	—	—	—
5-9%	7	7	5	n	4	—	—
10-14%	49	39	30	17	84	64	94
15-19%	27	23	24	23	4	28	6
20-24%	6	—	—	—	—	1	—
25-29%	n	20	36	34	—	—	—
30%+	n	—	—	—	—	—	—
Same	—	—	—	—	—	—	—
Decrease	—	—	—	—	—	—	—
No answer	11	11	5	6	8	7	—
Unit costs rise by:							
0-4%	n	n	n	—	—	—	—
5-9%	11	11	9	4	—	1	—
10-14%	27	18	23	13	42	32	83
15-19%	22	25	22	29	17	9	15
20-24%	10	14	23	32	33	1	—
25-29%	9	6	4	4	—	27	2
30%+	n	2	2	2	—	1	—
Same	1	1	1	1	—	—	—
Decrease	n	7	7	7	—	—	—
No answer	20	16	9	8	8	29	—

PROFIT MARGINS

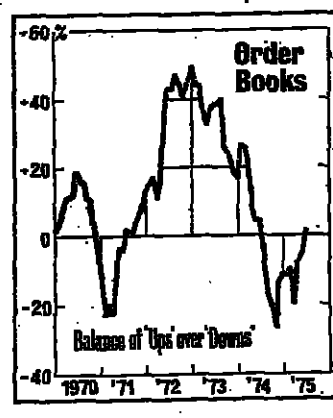
	July-Oct.	June-Sept.	May-Aug.	Apr.-July	Eng's (non-elect.)	Chemicals	Shipping and Oils Transport
Those expecting profit margins over the next 12 months to:							
Improve	24	24	15	16	42	1	—
Remain the same	24	37	44	51	4	69	—
Contract	37	38	36	29	50	4	100
No comment	5	1	5	4	4	26	—

ORDERS AND OUTPUT

Recession still deepening

THERE is still no sign of any slow down in the declining trend of new orders. Most firms in the three sectors covered last month said that orders were still falling and over half the all-industry sample, which covers the last four months' surveys, report the same trend.

The worst-hit sector in the latest survey is chemicals and oils where the effects of the weather on fuel deliveries have been super-imposed upon the low levels of industrial demand. The decline in the car trade has affected demand for paints and pigments, orders for



hospital supplies are said to be very unpredictable, but demand for agro-chemicals appear to be still buoyant.

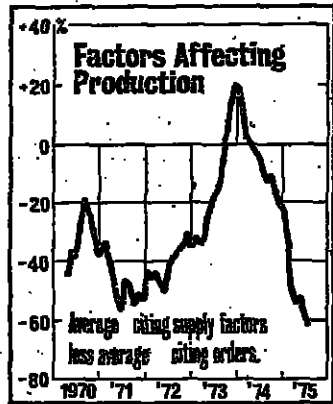
Looking further ahead, the trend of purchases of raw materials and other bought-in supplies is likely on balance to continue to be downward and production forecasts have again been scaled-back. In all three sectors respondents emphasised the difficulty of predicting sales and output up to 12 months ahead at the present time: there were too many uncertainties in the current situation both here and abroad.

CAPACITY AND STOCKS

Orders are the constraint

THE DEPTH of the recession is indicated by the way in which shortages of home and export orders have become the single dominating factor determining output schedules. Supply constraints have all but disappeared, except for a few localised complaints about the availability of skilled factory staff. Labour disputes, within the same company or in supplier organisations, are also a continuing cause of difficulty.

On balance industry expects the volume of work in progress to remain about the same over the next 12 months — which is



in line with current expectations about output/turnover over the same period. The same view is taken about materials and finished output stocks, although there is a slight tendency ("downs" over "ups") to foresee a fall. This broadly corresponds with the balance of opinion about purchases of bought-in supplies over the coming four months. Expectations about capacity utilisation rates have been adjusted in line with the current situation, but many firms are still working below these planned levels, particularly in the three sectors covered last month.

CAPACITY WORKING

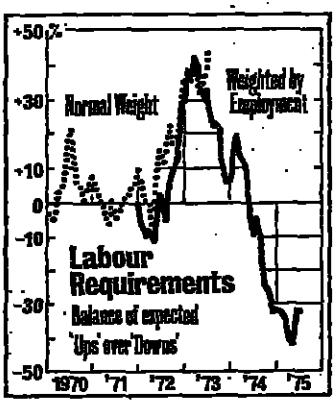
	July-Oct.	June-Sept.	May-Aug.	Apr.-July	Eng's (non-elect.)	Chemicals	Shipping and Oils Transport
Those working at:							
Above target capacity	8	8	16	9	—	15	—
Planned output	50	45	36	37	58	11	2
Below target capacity	38	47	48	54	42	60	83
No answer	4	—	—	—	29	—	—

INVESTMENT AND LABOUR

Further rise in unemployment

THE BEST that can be said about employment prospects at the present time is that the outlook is not deteriorating as rapidly as it was a few months ago. The balance of replies is still downward but no more so than previously and most firms hope to rely on natural wastage rather than redundancies.

In the case of capital expenditure, on the other hand, expectations appear to have improved slightly, principally because of a more bullish outlook in oils and chemicals, where North Sea investment is a major factor, and in engineering.



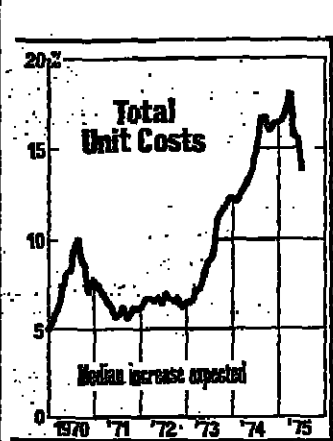
Indeed, the "ups" in the all-industry index now outweigh the "downs"—for the first time in just over a year. However, this series is based on forecast output prices rather than volume: in real terms the balance of spending intentions is still downward.

Relatively few firms expect to have to draw upon outside sources of finance to meet their capital needs during the next 12 months, and most think that their current liquidity level is now about right, although a few say that liquidity is still too low.

COSTS AND PROFIT MARGINS

Inflation down to 15%

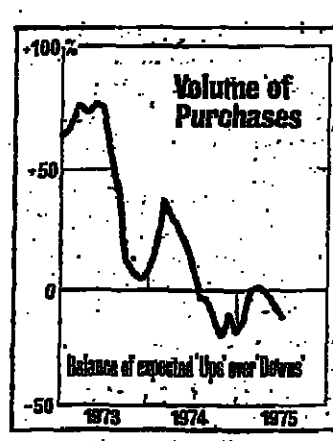
INFLATION expectations have eased a good deal since the Government brought in the £6 a week pay ceiling. The median forecast increase for wage costs over the next 12



months has come back to 13-14 per cent, while for total unit costs—which is a clear indication of the influence of the £6 limit. It is also noticeable, however, that few firms foresee increases of less than 10 per cent and none foresee increases of less than 5 per cent, which reflects many firms' belief that the £6 limit will be treated as a minimum as well as a maximum. In Oils, respondents are understandably not able to forecast prices.

The outlook for profitability over the next 12 months appears to have stabilised with a slight balance of "downs" over "ups" both for margins and for earnings on capital.

These surveys, which are carried out for the Financial Times by the Taylor Nelson Group, are based upon extensive interviews with top executives and output prices of their companies' median forecast increase is now situation and prospects.



Three industries and some 40 companies are covered in turn where an alternative weighting is specifically mentioned. The all-industry figures are four-monthly moving totals, covering some 120 companies in 11 industry groups (mechanical engineering is surveyed every second month).

BY ELINOR GOODMAN



1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

الفصل الأول

Nov. 4	Urwick Man. Marketing Management (cl. Nov. 24)	Slough, Bucks.
Nov. 4	IPC Bus. Trng.: Resource Management To-day	Royal Lancaster Hotel, W.2
Nov. 4-7	Institute of Housing Managers	Metropole Hall, Brighton
Nov. 4-7	Imperial Coll. of Science: Acmt. Techniques	Exhibition Road, S.W.7
Nov. 5	Legal Studies: Legal Bus. Court Litigation	Royal Lancaster Hotel, W.2
Nov. 5-6	Financial Time and Institute of Chartered Accountants in England and Wales; Inflation Accounting—Implications of the Sandilands Report	London Hilton, W.1
Nov. 6	Inst. of Directors Annual Convention: Leadership	Royal Albert Hall, S.W.7
Nov. 8-14	Inst. Mgmt. of Physical Distribution	Cranfield
Nov. 10	CEMPE: North Sea 1976 Conference	Café Royal, W.1
Nov. 10	NFU/CILA: Taxation and Agriculture	Kenilworth, W. Wickes
Nov. 11-12	Bus. Ind. Trng.: How to make Waste Pay	Café Royal, W.1
Nov. 11-12	Financial Times and the Banker: Offshore Financial Centres	Nassau
Nov. 12	Imbucon/AIC: Relocation or Dislocation	Financial Times Cinema
Nov. 12	Pallet 76: Materials Handling	May Fair Hotel, W.1
Nov. 12-15	Strategic Man.: Integrated Marketing Seminar	Royal Bath, Bournemouth
Nov. 17	Imbucon/AIC: Health and Safety at Work Act	Financial Times Cinema
Nov. 17-18	Graham: Team: Winning Bus. in Arab Markets	London
Nov. 17-18	Man. Trng. Conf.: Senior Managers in Action	Leicester
Nov. 17-21	P-E Cons. Group: Leadership in Management	Exham, Surrey
Nov. 18	Arabian Marktg. Research: Selling to Arabia	Cutlers Hall, Sheffield
Nov. 18	Henley Centre: U.K. Economy and Stock Market	Carlton Tower Hotel, W.
Nov. 18-20	Management Science: Financial Models	Bradford University
Nov. 18	NEDD: Strengthening Clothing Industry	Excelsior Hotel, Heathrow
Nov. 18	Assn. Gen. Controller: Taxation	Salé Road, W.1
Nov. 18-21	Frank Jenkins: Planning Pt. Carriages	Connaught Rooms, W.C.2
Nov. 21	Chem. Recovery Assn.: Cost and Waste Recovery	Post House Hotel, Manchester
Nov. 21-Dec. 3	Harry Mitchell: Work Measurement	3, High Road, Nottingham
Nov. 22-23	Computer Power: Operations Supervision	Cannock, Staffs.
Nov. 26	Stanland Hall: Replacement Cost Accounting	London Hilton, W.1
Nov. 26-27	Rudi Weissweiler: International Planning	Portman Hotel, W.1
Nov. 30-2 Dec. 5	Bradford University: Financial Marketing	Gunn Lane, Bradford
Nov. 1-2	Financial Times, Bertelskamp Tidende, Helsingin Sanomat, Norwegian Dagbladet of Commerce and Shipping and Svenska Dagbladet: The Private Sector in To-morrow's Economy	Copenhagen
Nov. 3-4	Financial Times: Third World Insurance Conference	Royal Lancaster Hotel, W.2
Nov. 3-5	RACIE Nat. Conf.: Trends in Training	Grand Hotel, Eastbourne
Nov. 4-5	Financial Times: Aviation in Asia	Hong Kong

**DRIVERS
JONAS**

هناك اثنان

FINANCIAL TIMES REPORT

Monday November 3 1975

FORTIES FIELD

The first substantial build-up of oil from the U.K. sector of the North Sea starts to-day when the Queen officially opens BP's Forties Field and oil begins to flow into the refinery at Grangemouth.

The high promise of new wealth

THIS HAS BEEN a half-decade of almost unparalleled change both within the industry and within the U.K., starting with the rash of great oil discoveries in the early seventies—of which the Forties Field still remains one of the most important—and continuing through times of political doubt and intervention, rapidly escalating costs, a maturing of the exploration phase to a steadier rate, the grappling with the development problems associated with the deep water and harsh conditions of the North Sea and, now finally, the beginnings of the production build-up itself.

They have been years of almost constant debate as well as activity as British industry has jostled with varying degrees of success for a place in the expanding market for off-shore goods and services; as politicians have attempted to balance out the conflicting invest. in advance of orders

nationalistic, fiscal and social pressures that always come with oil discoveries; as companies of varied background and experience have tried to come to terms with the problems of production and as a society ill-adjusted to rapid and novel demands on its skills and resources has attempted to cope with one of the largest and most ambitious economic developments to occur within its boundaries since the war.

Criticisms of the performance of industry, oil companies and Government alike have been profuse. They have often been well-founded. Officials and politicians were slow to see the fiscal and social implications of North Sea oil. But they have proved just as slow and confused in their efforts to rectify past mistakes and build a more secure framework for the future. Oil companies were quick to see the opportunities in the North Sea but, in their haste for rapid development, have all too often failed to appreciate the problems of manpower, planning and preparation that this entailed, preferring frequently to ignore their own responsibility for the strains which divers deaths and innumerable small accidents have illustrated.

British industry has been, on the whole, extraordinarily slow to see the prospects for new markets in off-shore development and has been all too frequently held back by an unwillingness to risk money or, perhaps the interests of the companies themselves did

In Scotland and in England, the development of oil has tended again and again to show up the weaknesses of society—its slowness to respond to change, the lack of mobility of labour, the difficulties in planning permission, the provincialism of local authorities and the lack of confidence and skills among politicians—rather than its strengths.

Effort

But the last five years have above all been the time not of hindsight and commentators but of the "doers"—the exploration managers that kept the effort going even when the weight of geological opinion was against them; the constructors and manufacturers who did make the investment and work with the development from early on; the oil company project managers who saw the vast and complex logistical effort of production programmes; the helicopter pilots, supply boat captains and the men who actually did the work.

With the final coming-on-stream of the Forties Field, much of the development has come to look inevitable, even predictable. This was not how it seemed at the time, at any rate from the outside. Perhaps the oil industry should have recognised early on that the North Sea was a major oil province of worldwide importance and perhaps the interests of the companies themselves did

tend to make them over-cautious in their public statement.

But at the time that the Forties Field was discovered in 1970 there were still few who believed that this was so, let alone that fields of the size of Forties would be found. It may be that, once Forties was discovered, the oil and supply industries, as well as Government, should have immediately recognised the importance and scale of the enterprise and reacted accordingly. But at the time that the Forties Field was declared commercial in 1971, there was still little to suggest that prices in the world market would rocket as they did three years later or, indeed, that costs of off-shore development would increase almost in tandem.

It is possible in retrospect to argue that the technology used in the Forties Field and many other fields to date has not so much been new technology as the scaling up of traditional systems developed in the Gulf of Mexico over a generation and that oil companies and industry should have foreseen the problems much earlier. But it has been the scaling up of technology, in the nuclear field, in the petrochemical field and elsewhere, that has always provided the real problems of engineering, just as it has been the problems of scale which have always presented the greatest challenge to management.

Bigness has been from the beginning the hallmark of the

North Sea—the largest marine structures ever built have been built for North Sea platforms; the largest diameter, deepest water pipeline has been laid off the coasts of Britain; some of the largest single project loans for private enterprise have been raised for North Sea fields.

But it is a bigness that has been the result of innumerable small and crucial decisions—the painstaking negotiations for loans, the operation of a pipe-laying barge in which everything has to go just right, the changes in design of the platforms as they are built and the installation of the structures in the unpredictable conditions of the North Sea.

It is for this as much as for what they can now do for the country that the Forties Field and the other major field developments around it in the North Sea at Brent, at Ekofisk, at Montrose and elsewhere should be recognised for the real achievements they are. Certainly they have illustrated many of the problems surrounding North Sea development—the delays which have made the Forties Field a year late into production, the escalation in cost which has doubled its investment from a predicted £350m. in 1972 to a predicted £700m. to-day and the politicking which has come to surround its taxation, participation and control.

But the really dominating feature of the development is

that British Petroleum made the decision so early to go for a full-scale development including pipelines and four mammoth production structures and that to-day, five years after the field's first discovery, the pipeline and associated on-shore facilities should be there and operational, that oil should be flowing and that all four structures should be in place.

Tribute

And it is a tribute not only to BP, which from the beginning did its best to encourage British suppliers, but also to the British companies concerned that all four platforms were built in Britain, that the second two were completed ahead of schedule and that some 60 per cent. of the overall contracts have gone to U.K. companies.

Yet it is the nature of all developments, and particularly one as rapidly moving and with such long lead-times as oil exploration and development that the present should appear passé and that the future should appear current. For the country as for the industry, the importance of the Forties Field is that it marks the first fruits of the labours of the last five years.

Forties alone, when it builds up to peak production in 1977, will deliver some 400,000 barrels a day of high-quality oil, or some 20 per cent. of U.K. internal demand at the time, and

will bring balance of payments savings of the order of £800m. a year. By next year it will be joined by the first production from the Beryl, Montrose, Brent and Piper Fields. By the end of 1977, with good fortune, the major Brent pipeline to the Shetlands should be in operation tying in production from a number of fields in the area including Thistle and Cormorant and production should be reaching some 40 per cent. of U.K. demand. By the end of 1978, output from the U.K. will jump to well over 1m. barrels a day, or net self-sufficiency, should be reached.

Set against the country's overall borrowing requirement in foreign currency, its historic low economic growth rate and its continued problems with the non-oil deficit on the balance of payments, it may not be possible any longer to treat this programme as the panacea for the country's woes that politicians have occasionally treated it as. But set against the difficulties that the country would face without North Sea oil, the importance of off-shore oil could hardly be over-estimated.

Nor should its benefits to Scottish employment and economic growth, to Britain's tax revenues and to the country's freedom of economic and social manoeuvre be ignored. The expenditure involved in developing the Forties and other fields has

already done much to influence regional performance to-day and it can be expected to do much to affect although not revolutionise national performance in the coming years.

For all the problems, the fact remains that by 1980 Britain will be the only country in Europe with overall self-sufficiency in energy and the fact remains that the North Sea represents a major new natural resource for a country badly in need of it.

North Sea oil is only now beginning to come to maturity. It will be the next five years which see it bringing practical and apparent benefit to the nation just as it will be the next five years that see companies and the Government decide on the moves which will take it on into the next decade, to continued self-sufficiency, further growth or gradual decline. And it will be the next five years which will witness the really new technology of sub-sea production, buoyant platforms, deep-water transport begin to emerge.

As the Queen turns the tap on Forties Field oil to-day, it is time to look on the future with a degree of optimism that

could never have been there without that oil. And it is also time to look back and, however trite it may sound, to applaud the efforts of those who made it possible during years when others looked on and doubted.

Adrian Hamilton

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and gas treatment units being the first to
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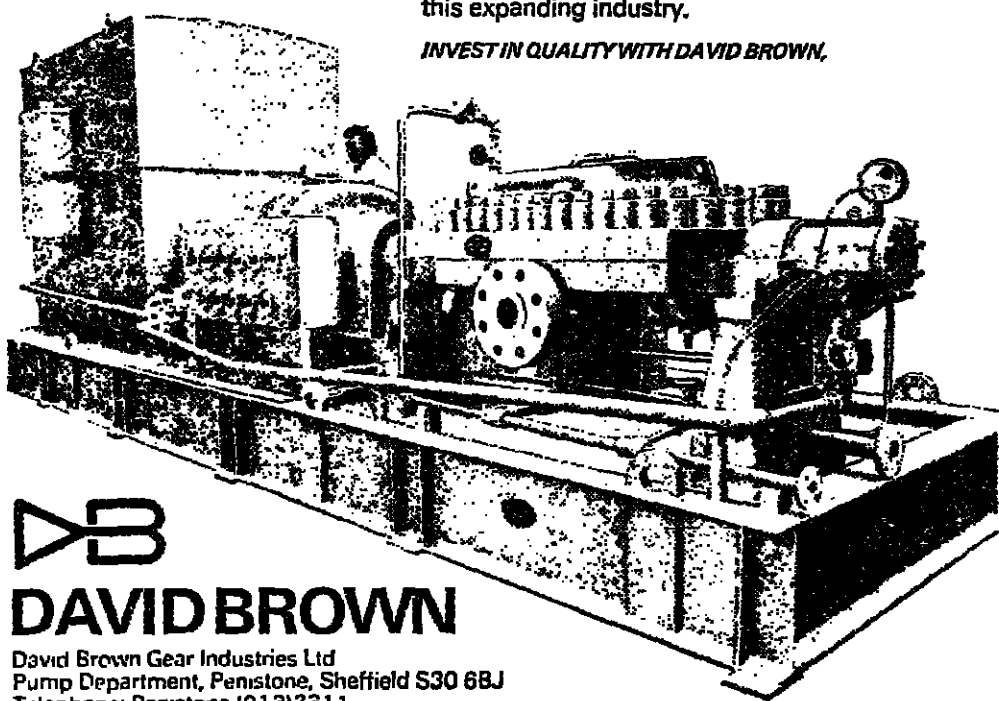
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FORTIES FIELD II

First in many areas

THE DISCOVERY and develop-
ment of BP's Forties Field off
Aberdeen is one of the seminal
events of the history of the
North Sea. Of that there can
be little doubt. The first major
oil find off-shore of the U.K., it
was also the first find that
proved not only that oil did
exist in the British sector of
the North Sea but that it lay
in large enough quantities to
justify expensive development
in deep water.

The first discovery to be made
by a British company, it was
drilled by a British-owned and
British-built semi-submersible,
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two major production platforms
virtually created a British steel
platform construction industry
at Highland Fabricator's green-
field site at Nigg Bay and
Lairg/ETPM's yard at Gray-
thorp near Teesside, while the
company's contracts for a whole
range of other items including
modules, electrical equipment
and development well drilling
helped to get other British com-
panies to gain their first foot-
hold in not only the North Sea
market but also the broader
worldwide offshore field.

In political terms, too, it was
BP's Forties discovery that
helped to arouse Government
concern about the tax offset
problems of the Middle East.
The potential profits that might
be made out of the North Sea
and the need for tougher action
to prevent offshore profits being
set against other aspects of the
international oil companies' business, just as its overall
financing package for the field
helped to create a whole new
banking interest in this area.

Yet this future and the
changes that the Forties would
bring was not always obvious
from the start. Despite BP's
reputation for uncanny success
as an exploration company, there
were several senior geologists
and executives in it who
doubted the potential of the

North Sea from the start and
who were firmly convinced that
oil, on the basis of experience
in onshore geology in the U.K.
and in Europe, would never be
found in sufficient quantities to
make much impact offshore in
the U.K.

Like other companies, BP's
first enthusiasm was for the gas
prospects in the southern sector
of the North Sea following on
from the major onshore discov-
ery of the Groningen gas field
by Shell and Esso in Holland
and the establishment of a
number of small gas fields on
the eastern coast of England.
Although the company did take
out licences further north
during the second round of
allocations in 1965, including the
Forties Field block 21/10, and
although it was specially
favoured by the British discov-
ery licensing system with its
emphasis on giving the best
blocks to companies with experi-
ence and an established position,
it was still with great doubts
that it started drilling in the
North Sea.

Incentive

The doubts about the North
Sea were only intensified when
the industry began to move to
the north in the waters off the
Scottish and Norwegian coasts
in the late 60s. By that time
the peak of gas exploration had
been passed, leaving a some-
what sour taste among the
companies involved which felt
that the price being paid for
the gas left them little incen-
tive to search further.

Little in the drilling either
in the southern sector of the
North Sea or in the early wells
in northern waters suggested
that the conditions were right
for any major oil accumula-
tions. The price of oil on the
world markets was falling and
the finances of the major oil
companies were under heavy
pressure as the independents
with access to cheaper Libyan

oil moved into the market in
the following year—the com-
pany faced options. The high
productivity of the wells, the
thickness of producing sands
down to the company's refinery
at Grangemouth and a full range
of on-shore facilities.

On the whole, these early
decisions have been justified by
experience since. Like other
companies, BP almost certainly
underestimated the actual prob-
lems of scale and weather
involved in the North Sea. The
construction of the first two
platforms required the creation
of two entirely new businesses
in Scotland and England and
the strains of this, of labour
problems and of the effort to
refine the design during con-
struction meant that both were
a year late.

Like other companies, BP
underestimated too the difficul-
ties of laying pipe and installing
platform equipment off-shore in
the North Sea. Laying of the
subsea line, intended to take a
single season, in fact slipped
well over into the next year.
Filling and installation of the
modules on the first two plat-
forms was delayed by several
months and it was only the ex-
penditure of large sums in
keeping a fleet of barges and
vessels throughout the winter of
1974-75 which enabled the com-
pany to keep its production
schedule even within a year's
delay.

The alternative would be to
lay a pipeline to the coast. This
was likely to delay the time of
start-up, involve greater "front
end" loading burdens on the
company's finance and would in-
volve BP in laying the longest
deep-water, large-diameter pipe-
line ever attempted by the
industry. But considering the
size of the field and its poten-
tial production, it would bring
greater long-term benefits in a
more rapid build-up to full pro-
duction, as well as being safer.

It was the latter solution
which the company eventually
chose and which it has proceed-
ed with ever since. Delinea-
tion drilling in 1971 confirmed
the field as a "giant" with
more than 4bn. barrels of oil
in place and a recoverable
reserve of between 1.5 and 2bn.
(the field is now officially cate-
gorised as having 1.8bn.).

By the end of that year the
company was able to announce
a £300m. programme involving
the installation of four major
platforms on the field (of steel
design, partly because of the

peaks of the Eastern Highlands
which, until then, had virtually
no pool of skilled engineering
labour.

On the Firth of Clyde, the
Forties project was the moving
force behind the establishment
of the Foster Wheeler-John
Brown deck module fabrication
yard at Dunbarton. This has
since developed as the largest
of Scotland's specialist module
yards, although it was planned
originally simply to handle the
BP contract.

Other diverse Scottish con-
cerns were quickly drawn into
the business through that
initial oilfield project. These
included manufacturers of such
items as pumps, switchgear,
turbines, communications equip-
ment, generators and instru-
mentation. On the service side,
local companies won business
supplying fleet operators
(working out of Aberdeen and
Dundee), between which BP
had divided its administrative
and offshore operations) and
marine and consulting
engineers became engaged in
designing and constructing the
Forth tanker terminal and gas
treatment plants at the com-
pany's Grangemouth refinery,
which both mark the end point
in Scotland of the oil's 250-mile
journey from Forties.

Chris Baur
Scottish Correspondent

Concession

Partly as a result, cost esti-
mates soared, more than
doubling to around £750m.
within the space of a few years
and it was only a dramatic im-
provement in the company's
overall finances during last
year which saved it from
having to negotiate further
loans over and above the £370m.
loan package so carefully and
painstakingly negotiated in
1972. Original hopes within the
company that profits could be
set off against overall corporate
losses—real and unreal—were
finally squashed by the Public
Accounts Committee Report of
1973 and it was only the
quintupling of world oil prices
coupled with substantial conces-
sion in the Government's
Petroleum Revenue Tax propo-
sals which prevented the
project from turning sour.

Yet these problems were
overcome. The pipeline was
laid and largely buried by the
end of 1970. The first two plat-
forms were put into position by
the end of 1974 and drilling
from the first one commenced
in June of this year just as the
second two platforms were
completed, ahead of schedule.
By September of this year the
first oil was being produced
and was starting to fill the
lines and the company was able
to go ahead with plans for the
official inauguration of the field.

Work on the field has still
some way to go, although it is
bound to be something of an
anti-climax from now on. Drill-
ing from the second platform,
Highland I, is due to commence
over this winter and with luck
the modules on the second pair
of platforms should be suffi-
ciently advanced to start drill-
ing from them in early spring
and autumn of next year. If
this goes well, full production
should have been reached by
mid-1977 to provide the country
with some 20 per cent. of its
fuel needs, to provide BP with
its first real profit on the field a
year later and to provide the
nation as a whole with a
desperately needed new re-
source and a new hope for the
future.

Adrian Hamilton

The Scottish impact

AS THE first major U.K. oil-
field in the North Sea, BP's
Forties project, on which de-
velopment work began almost
four years ago, was not only a
vast offshore baptism for the
company: it was also the enter-
prise on which Scottish industry
cut its teeth. It is therefore
interesting to look back at some
of the assessments BP were
making in the early days. These
were, after all, the estimates
on which manufacturers, service
operators, finance houses and
public authorities were largely
weaned—though many of them
look distinctly unreal now for
reasons which have only become
plain with the benefit of hind-
sight.

The crucial estimates in deter-
mining the impact of the de-
velopment on the local economy
were those relating to expendi-
ture and employment. The
company's evaluation in Decem-
ber 1971 was of a first stage
Forties development costing
about £180m., plus some £15m.
for development drilling. This
would achieve roughly 50 per
cent. of the production flow
from the field by late 1975.
Total costs for the full develop-
ment, to peak production of
about 20m. tons a year, it was
thought then, would probably
reach towards £250m. Two
months later this global figure
was revised to around £300m.
and later still to £360m. in what
then became the largest fund-
raising syndication ever.

Indeed, in the early stages
during which the Forties Field
was opening up the unfolding
North Sea market, it seemed
that many of those industrial
managers who did not actually
disbelieve what was about
them, declined to imagine that
there was just too big for them
to handle. And often this will
have been a realistic conclusion.
Some, who investigated more
deeply, were discouraged
(sometimes had to be dis-
couraged) by a reluctantly
honest appraisal of their own
limitations, whether these con-
cerned production capacity, tech-
nical skill, financial stability or
management competence.

But others soldiered on. The
director of the Forties project,
BP's Mr. Mark Lanning, now re-
calls the psychological change
that took place. "In the early
days of 1972 people were
wondering into my office asking
me what they should do," he
says. "Now they are coming in
to tell me what they are going
to do. The whole atmosphere has
altered since the first days when
a lot of folk were simply
floundering around."

That the climate has changed
is itself a substantial tribute to
BP's tenacity. From the outset
an extraordinary amount of
management effort of its 150-
man Forties task force was
devoted to exhaustive explan-
atory work with environ-
mentalists and landowners—
wayleaves had to be negotiated
through some 300 separate
parcels of land for the 140-mile
pipeline from Cruden Bay on
the Aberdeenshire coast, to
Grangemouth on the Firth of
Forth—and to extensive mis-
sionary work with industry and
commerce.

If anything, the company now
probably feels that the net it
cast to encourage local indus-
try participation was too wide.
It certainly created huge admin-
istrative problems. BP's first
trawl for likely builders of deck
modules for its production plat-
forms, for instance, produced a
list of some 43 companies, all
of which had to be assessed.
Similarly, approaches were
made to 50-75 companies to
identify suitable fabricators of

such items as platform structure
nodes, leg sections and pile
guides.

The actual fall-out in Scotland
from all this organisation and
"educational" work has been
considerable. It is not possible,
of course, to calculate the pre-
cise proportion of the 500-odd
Scottish-based companies now
engaged in oil-related manufac-
turing and service work, which
actually owe their presence in
the offshore markets to the
spark provided by Forties. But
the list would include some
seminal projects.

Welding school

The giant among them is the
Nigg dry dock created in Easter
Ross by Highland Fabricators
(a partnership of Brown and
Root and George Wimpey), at a
cost of some £25m. That yard,
which has delivered two of the
four Forties platform jackets, is
now again building up its labour
force from about 1,600 to 2,600
as it tackled its third contract,
for the Ninian oilfield. The
initial phases of its development
were substantially funded by BP
and the oil company also met
the bill for the training of some
1,800 men at the Highland Fab-
ricators welding school. The
Nigg yard was the first of two
located in the Moray Firth area
and has been instrumental in
transforming the economic pros-

pects of the Eastern Highlands
which, until then, had virtually
no pool of skilled engineering
labour.

On the Firth of Clyde, the
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Chris Baur

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Adrian Hamilton

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EXPRO. Is the first wholly British Company to provide exploration and production services to the Oil Industry. The management and staff have world-wide experience of oil field operations. With a London Head Office, and bases at Aberdeen and Great Yarmouth, Expro provides a specialised oil field service, on either a contractual or a "call-out" basis. Expro is particularly proud to be playing a vital role in today's operation, having been chosen to provide BP with specialised production services both offshore on its Forties platform and at Cruden Bay.

Earlier this year Expro played a major role in bringing into production the first British North Sea Oil: Expro continues (under contract) to operate Hamilton Brothers Oil & Gas Ltd's Argyll field.

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Expro has a firmly established reputation for high quality testing services. Expro equipment includes surface test trees, oil and gas separators, choke manifolds, heaters, tanks, pumps, connecting pipework, oil burners, booms, mobile laboratories and offices for on and offshore use.

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Expro's laboratory processes samples of crude oil, condensate and gas. Results are delivered to boxes throughout the British Isles, and worldwide.

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FORTIES FIELD III

Surmounting the equipment problem

I OPENED the small packet joints, with four main legs pile containing the Perspex BP driven dozens of feet into the paperweight with its encapsulation.

This thin, treacherous black liquid has cost enormous sums of skills, seamanship and good money and a not inconsiderable weather, and it speaks volumes of life and limb. By far for the teams that accomplished the greatest feat in developing installation that each tower was the Forties field was incurred set down within a few yards in the construction and installation of the four steel production platforms and the subsea pipeline that runs 110 miles from the field to Cruden Bay—about £515m. out of an estimated expenditure of £745m. for the complete project.

When the commercial potential of the Forties Field was realised by BP in 1970 the company was faced with a decision about the kind of production system that would be viable. Traditionally, offshore fields had been developed using steel towers that supported all the facilities for drilling, the separation of oil, gas and water, flaring, communications and accommodation. Concrete towers had been designed, but never built or used for oil production in such a depth as the northern North Sea, and subsea completion systems were seen as an imaginative solution for the far-distant future.

Injection

It is now a matter of record that BP opted to use four steel towers in the Forties Field. The towers now stand in about 400 feet of water and must be able to survive storm conditions that beggar description. The production schedule calls for a number of wells to be drilled, deviating from each tower to give the best possible drainage from the field: 27 wells from each of the first two platforms to be installed (Graythorpe I and Highland II), and 26 from the second two (Graythorpe II and Highland II). Six or seven of the wells from each platform will be used for water injection, the rest for oil production.

The total weight of the decks and equipment supported by the towers is about 18,000 tonnes. This loading, together with the massive forces exerted on the structures by waves, winds and tides, required exacting design and fabrication criteria. The towers are a complex lattice of welded steel tubes and "nodal"

from Cruden Bay to the refinery at Grangemouth.

BP's latest estimate for the completed subsea pipeline is £115m. for its 110-mile length. That is £594 a yard, a staggering sum of which the cost of the steel pipe itself is only a small fraction. It includes the considerable cost of coating to give the pipeline "negative buoyancy" and protection against damage from dragging anchors and fishing trawls together with the huge daily costs paid to the contractors who operate the fleets of supply boats and tugs, the lay barge and the trenching barge.

The lay barge is a complex vessel that inches itself along the predetermined pipeline route while welders couple sections of the pipe together, the welded pipeline dropping to the sea bed over a supporting pontoon or "stinger" as the barge moves forward.

Once this operation has been successfully completed, the trenching or "bury" barge moves along the pipeline as it lies on the seabed, scooping a trench in which the pipeline lies for added protection. Depending on the state of the seabed, several passes may be necessary to give the pipeline a covering of more than a few feet.

It requires little imagination to understand what a complex procedure this is, but even BP underestimated the shattering effect of that bogman of subsea pipe layers: the wet buckle. This is a rupture in the welded section of pipe, usually resulting from a kink during laying and sometimes from the failure of a piece of equipment such as a valve.

Wet buckle

Ron Watkins, BP's manager of pipelines and terminals, explains how the cost for such an incident can escalate to frightening levels: "When we calculated the possible cost of a wet buckle we thought we could fix one in about three weeks. But shortly after we started the operation, a valve that hadn't been tested properly failed. The line ruptured and flooded with water, sand and other material being swept several miles into the pipe.

"This incident took about three months to repair and cost us about £2m. Another time, one of our contractors dragged anchors in a storm and did millions of pounds of damage to the pipe trying to recover anchors worth just a few thousand pounds."

The Forties pipeline is one of the deepest large-diameter subsea projects yet undertaken by the oil industry. The 36-inch diameter pipe can deal with a production rate up to 300,000 b/d from the Forties and was installed only after about £1m. had been spent on development work with the contractor (Salpem) in the Mediterranean.

Ron Watkins succinctly summed up the lessons learnt in this project by saying that anything to do with North Sea offshore work has to be planned onshore meticulously, down to the last nut and bolt. "The cost of even a simple mistake at 400 feet is too great," he said with feeling.

With the above figures in mind we can only agree with him. But even these enormous extra operating costs would pale into insignificance if it transpired that BP had opted for the wrong kind of production system in the first place. Company engineers pooh-pooh the possibility of a catastrophic collapse of the Forties towers, but the structural record of smaller towers in, say, the West Sole gas field is not encouraging, particularly in view of the paucity of accurate data on weather, wave heights and hydrodynamic forces.

Whatever the virtues and failings of giant steel towers, the four Forties platforms and the associated pipeline have provided British industry with a large and attractive market for goods and services of all kinds. Harry Bourne singled out the Acrow company, Adamson and Hesthett—manufacturers of boiler and turbine equipment, pressure vessels, heat exchangers and other similar equipment—as having pulled out all the stops to re-gear to the North Sea oil industry. The company has obtained orders totalling over £23m. for oil platform legs and tubular sections and claims to have delivered every completed order on time.

John Wilson

Onshore facilities

THE OFFSHORE programme to find and produce oil from the Forties Field has inevitably attracted the spotlight—rightly so in view of the working conditions and the technology involved—but the establishment of land facilities has also been an ambitious and costly business, attracting some £50m. to £60m. of investment.

Indeed, what happens to the oil once it is landed at Cruden Bay serves to indicate the importance of North Sea oil and gas to British industry as well as the country's balance of payments. For the first time British interests are able to pump crude from their own fields to refineries and on to power stations, petrochemical plants and the petrol pumps.

The first land link in the chain is the 36-inch diameter pipeline which stretches 127 miles across Scotland from Cruden Bay to the BP refinery at Grangemouth. The route runs to the west of Aberdeen, south to Strathmore, on to Perth, where the line crosses the River Tay to the east of the city, over the Ochil hills, across the Forth and then west to Grangemouth.

BP says that the route was carefully chosen to avoid, as far as possible, mining areas

(because of the threat of subsidence) and areas of particular ecological importance. Permission for the £15m. operation was obtained from some 300 owners or occupiers of land. Although there were five statutory objections to the proposals, these were withdrawn after further negotiations.

Conventional pipelining techniques were used although the Tay and Forth crossings posed a few special problems. Here the work was carried out at times of the year which ensured that salmon and other river life were not adversely affected.

Recent activities of the Tartan Army, which has sabotaged control equipment on this pipeline, has served to illustrate not only the dangers of disrupted operations but also the possibility of leaks occurring. Apart from alarm systems, based on line pressures and volumes, isolated valves have been installed every ten miles and at each river crossing as precautionary measures. In addition contingency plans have been set up to ensure the immediate shut-down and bleeding of the line.

The landline ends at the Kerse of Kinnell, near the Grangemouth refinery where a

new £10m. gas separation plant has been built. Gas taken from the separators will feed a gas treatment plant which will recover propane and butane liquids as well as "pentane plus" condensate and dry gas steam.

From a flow rate of 400,000 barrels a day of oil, the company expects to extract about 230,000 tons a year of dry gas, 430,000 tons per annum of propane, 280,000 tons a year of butane and some 100,000 tons a year of condensate.

Gas deals

It was learned in August that BP has agreed to sell both the residual gas associated with the Forties field and its share of the Frigg Field's gas to the British Gas Corporation. Details of the deals have not been disclosed; indeed, most of the associated gas in the Forties Field will be used by BP at the field itself and at its Grangemouth refinery. Nevertheless, it is thought that at peak production the company will have some 10m. to 15m. cubic feet a day of surplus gas and it is this that BP has agreed to sell to the Gas Corporation over a limited number of years at an undisclosed price.

Booster pumps will split the crude into two streams at Grangemouth, one feeding the refinery at an average of 100,000 barrels a day in phase one of the operation, and the balance to a new £15m. marine terminal and storage facility in the vicinity of the Forth road and rail bridges.

As the maximum production rate of the Field will be well in excess of 400,000 barrels a day, it is possible that 300,000 barrels a day and more may pass through this new terminal.

From the Kerse of Kinnell the crude will travel through a 30-inch pipeline to the onshore storage terminal at Dalmeny, three miles inland from the Forth. From there it will be pumped, via a 48-inch submarine line, to a sea island berth off Hound Point, about a mile east of the Forth rail bridge.

Here, in a water depth of some 80 feet, tankers of between 50,000 and 300,000 dwt. will be loaded at a rate

of up to 15,000 tons an hour. In a Middle East-type operation the crude will then be shipped out to export markets or to other UK refineries.

A proportion of the crude piped into the 10m. tons a year Grangemouth refinery will eventually end up as naphtha, a raw material for the chemical industry. The refinery is already linked to BP Chemicals' adjoining production complex and now, with assured supplies of feedstock, the whole integrated operation becomes an even more attractive proposition.

Established in 1951, the petrochemicals complex has emerged as one of the largest in Europe, covering some 205 acres of the 380 acres available. Drawing feedstock from the refinery, the complex produces a wide range of materials used in the chemicals, plastics, synthetic rubbers and fibres industries.

The total capacity of the site is over 1m. tonnes a year although the current depression in the chemical industry means that the actual production levels are well below this at present. Nevertheless it is clear that BP Chemicals sees Grangemouth as the centre of major expansion in the future.

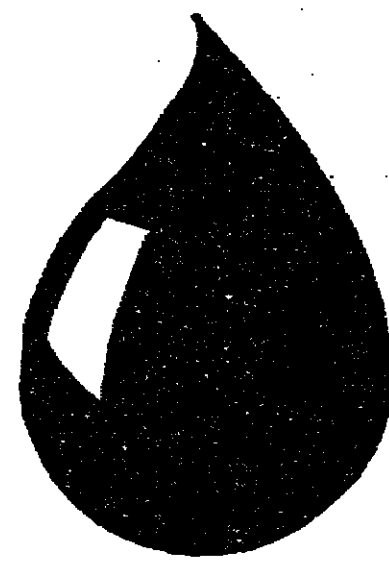
BP Chemicals is currently spending £68m. on developing the Scottish site including £18m. on a new plant to produce 54,000 tonnes a year of high density polyethylene—a project announced a matter of weeks ago.

The company would have liked to have developed at a faster rate but it has been held up by cash flow constraints and the depressed market for chemicals.

In spite of the present recessionary problems, the chemicals arm of BP has made little secret of the future plans for Grangemouth oil-chemicals operation. The company was at pains to tell a gathering of European journalists recently that the large amount of land still available for development and the good port facilities to handle exports gave Grangemouth "the greatest petrochemicals potential in Europe." The potential has been further enhanced thanks to the arrival of North Sea oil for fuel and feedstock.

Ray Dafter

First



The first mainline pumps for North Sea oil were built by Weir Pumps Ltd.

The first oil piped ashore from any British field is speeded on its way by Weir pumps—255 miles from the BP Forties production platforms to the Grangemouth refinery. Many more Weir pumps are used in other installations at sea and ashore.

The first sea-bed production platform,

Graythorpe One, was lowered into position with the help of Weir-Pacific valves. Hundreds of the company's valves are installed in production platforms all over the North Sea.

Steel castings from the Weir Foundries Division, Polypac oilfield rubber consumables, Zwicky filters and a wide range of other

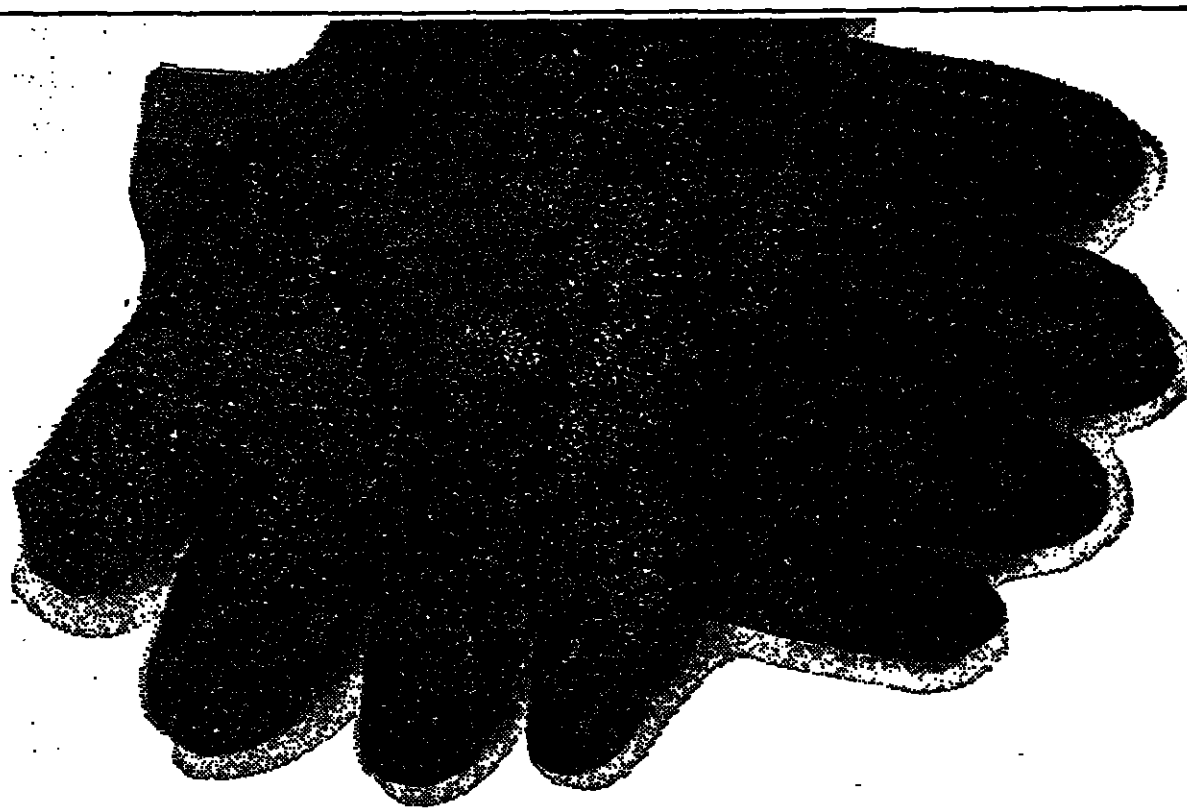
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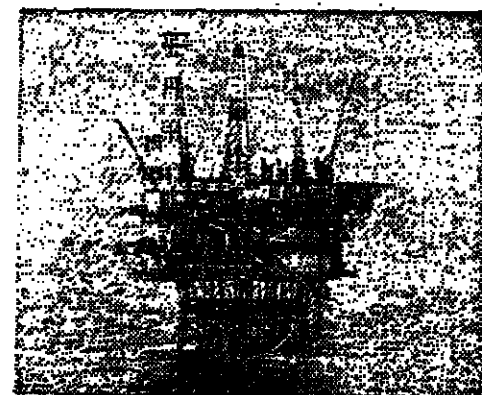
Oil from the Forties: KCA Drilling have a big hand in it, too.

KCA Drilling are drilling contractors to BP in the Forties Field. Now that the flow of oil from BP's Forties Field has become reality, we will continue to have a big hand in it. As drilling contractors, KCA Drilling have worked with BP in the construction of the drilling equipment on Graythorpe I and are now drilling some 27 wells from this platform.

KCA Drilling is a British oil-drilling company which provides management and equipment for oil field operators worldwide: Nigeria, Turkey, UK, Libya and Algeria for land-based rigs; Forties and Beryl Fields in the North Sea for off-shore rigs.

KCA Drilling is proud to be

associated with BP in opening up Britain's first major North Sea oilfield.



Production Platform Graythorpe I in BP's Forties Field in the North Sea, where KCA are drilling some 27 wells.

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John Brereton are proud to be associated with the BP Forties achievement

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FT SHARE INFORMATION SERVICE

Table with multiple columns: Stock, Price, Dividend, etc. Includes sections for 'BRITISH FUNDS', 'INTERNATIONAL BANK', 'CORPORATION BONDS', 'FOREIGN BONDS & RAILS', 'AMERICANS', and 'CANADIANS'.

BANKS AND HIRE PURCHASE

Table listing various banks and hire purchase companies with columns for Stock, Price, Dividend, etc.

BUILDING INDUSTRY - Continued

Table listing building industry companies with columns for Stock, Price, Dividend, etc.

DRAPERY AND STORES - Continued

Table listing drapery and stores companies with columns for Stock, Price, Dividend, etc.

ENGINEERING - Cont.

Table listing engineering companies with columns for Stock, Price, Dividend, etc.

ELECTRICAL AND RADIO

Table listing electrical and radio companies with columns for Stock, Price, Dividend, etc.

CHEMICALS, PLASTICS

Table listing chemicals and plastics companies with columns for Stock, Price, Dividend, etc.

BEERS, WINES AND SPIRITS

Table listing beer, wine, and spirit companies with columns for Stock, Price, Dividend, etc.

CINEMA, THEATRE AND TV

Table listing cinema, theatre, and TV companies with columns for Stock, Price, Dividend, etc.

ENGINEERING, MACHINE TOOLS

Table listing engineering and machine tool companies with columns for Stock, Price, Dividend, etc.

FOOD, GROCERIES, ETC.

Table listing food, grocery, and other companies with columns for Stock, Price, Dividend, etc.

HOTELS - Continued

Table listing hotel companies with columns for Stock, Price, Dividend, etc.

HOTELS - Continued

Table listing hotel companies with columns for Stock, Price, Dividend, etc.

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